



National Park Service  
U.S. Department of the Interior  
Casa Grande Ruins National Monument  
Coolidge, Arizona

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# **Resource Protection Study**

## **Environmental Assessment/Assessment of Effect**

**November 2003**



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### **Summary**

The National Park Service proposes to acquire new lands in order to preserve cultural resources - particularly archeological sites - that are thematically related and significant to the interpretation of Casa Grande Ruins National Monument. A cultural resources inventory of the general area surrounding Casa Grande Ruins National Monument was conducted by the National Park Service to determine which properties contain significant intact cultural resources and may be available for acquisition. From the properties that met these criteria, four alternatives were developed that are carried forward in this document. Each of these alternatives involves Casa Grande Ruins National Monument acquiring various acreages of land from federal, state, and/or private land owners in addition to implementing connected actions following acquisition such as fencing, erecting signs, and conducting monitoring and restoration.

In order to expand the boundaries of Casa Grande Ruins National Monument through the acquisition of new lands, Congressional approval must be received. To facilitate the Congressional approval process, a separate Resource Protection Study has been developed, which discusses in more detail how the alternatives were developed and illustrates how any additional properties that are acquired will meet and possibly enhance the reasons for which Casa Grande Ruins National Monument was established. The Resource Protection Study is published as a separate document.

This document is an Environmental Assessment/Assessment of Effect which has been prepared in compliance with the National Environmental Policy Act (NEPA) to provide the decision-making framework that 1) analyzes a reasonable range of alternatives to meet project objectives, 2) evaluates potential issues and impacts to Casa Grande Ruins National Monument's resources and values, and 3) identifies mitigation measures to lessen the degree or extent of these impacts. Resource topics that have been addressed in this document because the impacts associated with this project will be greater-than-negligible include archeological resources; historic structures; ethnographic resources; prime and unique farmlands; visual resources; visitor use and experience; and park operations. All other resource topics have been dismissed because the project will result in negligible effects to those resources. No major effects are anticipated as a result of this project. Public scoping was conducted to assist with the development of this document and no comments were received.

### **Public Comment**

If you wish to comment on the Environmental Assessment/ Assessment of Effect, you may mail comments to the name and address below. This Environmental Assessment/ Assessment of Effect will be on public review for 30 days ending December 30, 2003. Please note that names and addresses of people who comment become part of the public record. We will make all submissions from organizations, businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses available for public inspection in their entirety. If you wish us to withhold your name and/or address, you must state this prominently at the beginning of your comment.

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# PURPOSE AND NEED

## Introduction

Casa Grande Ruins National Monument (Monument) is located in the City of Coolidge, Arizona approximately 60 miles southeast of Phoenix and 70 miles northwest of Tucson (Figure 1). The City of Coolidge is a small rural community supported by farming and tourists that was once part of a larger prehistoric settlement centering around the Casa Grande, or Great House. The Casa Grande is one of the largest and most mysterious prehistoric structures ever built in North America. Casa Grande Ruins National Monument was established on August 3, 1918 by President Woodrow Wilson to protect the Casa Grande and other archeological sites within its boundaries. As a result, Casa Grande Ruins National Monument became the first prehistoric and cultural preserve to be established in the United States and became the fifth oldest unit in the National Park Service.

Casa Grande Ruins National Monument encompasses a total of 472.5 acres and is managed by the National Park Service. Within the Monument's boundaries are approximately sixty archeological sites including the Casa Grande. Visitors to the Monument have an opportunity to enjoy the museum, tour the largest of six "compounds" (which includes the Casa Grande), and view the prehistoric "ballcourt". A picnic area is also provided for visitors' enjoyment.

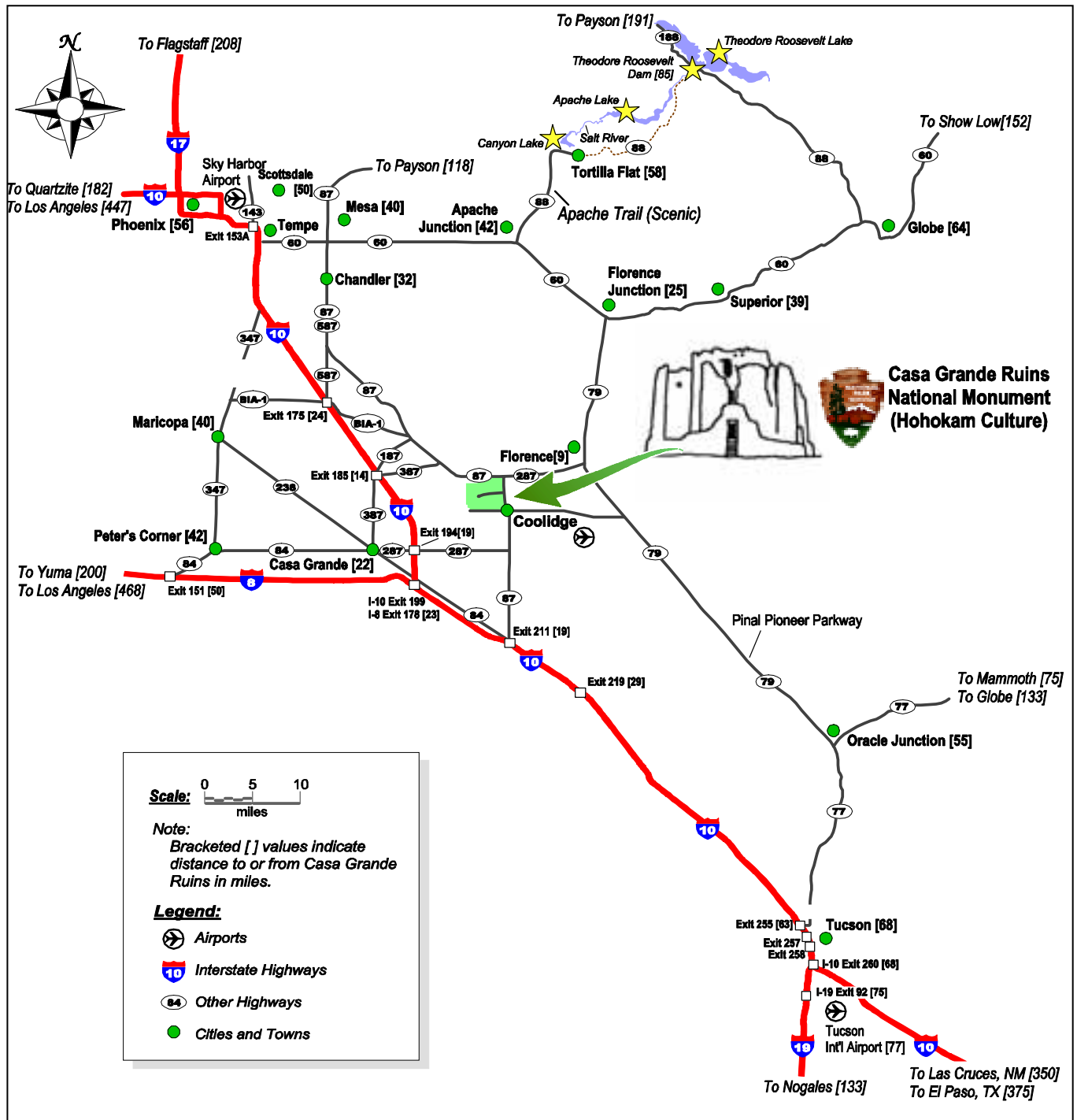
When the original boundaries for the Monument were designated, the extent of the Hohokam culture and their villages was not fully understood. If archeologists had known in 1918 what they know today, the original boundaries of the Monument would have likely been much larger. In recent years, the City of Coolidge has experienced rapid economic development in the form of businesses and residential communities. This development has created new challenges for protecting the area's rich archeological resources. In an effort to preserve these cultural resources, Casa Grande Ruins National Monument proposes to protect and acquire additional lands known to have significant archeological resources that are thematically related to the Casa Grande.

The purpose of this Environmental Assessment/ Assessment of Effect is to examine the environmental impacts associated with the proposal to acquire and protect these additional archeological resources. This Environmental Assessment/ Assessment of Effect has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, regulations of the Council on Environmental Quality (CEQ) (40 CFR 1508.9), and the National Park Service Director's Order (DO)-12 (*Conservation Planning, Environmental Impact Analysis, and Decision-making*).

In addition to the Environmental Assessment/ Assessment of Effect, a separate Resource Protection Study has been prepared which analyzes in more detail how these additional properties are significant to the interpretation of the Monument and why they should be acquired by the National Park Service. In order to acquire any additional lands and expand its boundary, Casa Grande Ruins National Monument must receive Congressional approval, and the Resource Protection Study is intended to facilitate that approval process. The Resource Protection Study is being published simultaneously with the Environmental Assessment/ Assessment of Effect for public review.



Figure 1 – Location of Casa Grande Ruins National Monument



## Background

Casa Grande Ruins has traditionally been an interpretive National Park Service unit with one major resource, the Casa Grande (Big House) as it was named by Padre Kino in 1694. For years, the rural environment surrounding Casa Grande Ruins National Monument afforded ample protection for the 472.5 acres, and allowed management to focus most of its resources toward interpretation and preservation.

The twenty-first century ushered in major changes in the form of economic development, improved transportation, growing rural communities with expanding neighborhoods, and commercial development. The City of Coolidge doubled in population from 4,601 in 1970 to 8,500 in 2003.

In 1983, Casa Grande Ruins National Monument was annexed into the City of Coolidge, and is located at the very northern limit of the city. Annexation brought both positive and negative attributes. In terms of positive attributes, city resources including police, fire protection, and refuse removal are provided. Partnership in planning, zoning, and monument community support are also positive. Negative attributes include land encroachment along the Monument's boundaries, noise and night sky degradation, increased traffic, air pollution, and all other associated values of living in the city (i.e., trespass and vandalism).

Like so many communities in the fast-growing southwestern United States, Coolidge is experiencing change: new businesses, residents, and opportunities for economic development. In the spring of 1999, plans for a Wal-Mart superstore on the northeast corner outside of the Monument's boundaries became known. At first, Wal-Mart planned only limited testing along a short access road into the parking lot. However, they were eventually persuaded by archeologists and the Native American community to do more extensive testing in order to get a better sense of what resources would be destroyed if the store was built. Upon completion of this testing, Wal-Mart decided to move the store slightly so that it would not impact features along the western edge of the Grewe site. They also agreed to donate a portion of the property with an adobe-walled compound to the Archaeological Conservancy. Shortly after that, an existing Safeway store near the southeast corner of the Monument underwent extensive remodeling. Again, an agreement was established so that a program of archeological testing and data recovery could be carried out prior to construction.

Participants in the burial consultation on the Wal-Mart and Safeway properties, especially those representing "the Four Southern Tribes," precipitated the formation of a group known informally as Casa Grande-Coolidge partners. Several meetings were attended by representatives from the tribes, Arizona State Museum, National Park Service (NPS), Pinal County and the City of Coolidge (including the townspeople), the Archaeological Conservancy, National Parks Conservation Association, Arizona State University, and private archeological consultants. Some of the issues that were discussed included archeological inventory, planning and zoning, a burial agreement for the City, expansion of Casa Grande Ruins, the possibility of developing a National Heritage Area, public education, and ways to improve communication between all those who were concerned.

Finally, this acute interest in these nationally significant cultural resources led the National Park Service to initiate a Resource Protection Study to develop alternatives for protecting archeological resources not currently included in the Monument. This study has a thematic basis and will focus on resources of two types: 1) those in the immediate vicinity of the monument that represent the local history of human habitation and land use, including the prehistoric period of the Grewe site and the Great House and continuing into historic times with irrigation agriculture by the Akimel O'Odham and Euro-American settlers, and 2) Hohokam sites of the Classic period, i.e. those contemporaneous with the Great House, along the prehistoric irrigation canal that begins about 20 miles east of Coolidge. Protection, not necessarily acquisition, is the primary goal of the Resource Protection Study. Therefore, this document analyzes different approaches to protecting important cultural resources including acquisition and the development of heritage areas.

## Purpose

The purpose of the project is to preserve cultural resources currently situated outside the Monument's boundaries. This purpose is consistent with the goals and objectives outlined in the 1) Monument's enabling legislation, 2) the *2001-2005 Strategic Plan* (NPS 2000a) and 3) *2001 National Park Service Management Policies* (NPS 2000b). The goals and objectives from these plans and policies are described in more detail below, along with reasons why this project assists in addressing those goals and objectives.

1. **Monument's Enabling Legislation** - When Woodrow Wilson declared the Casa Grande to be a National Monument in 1918, the enabling legislation stated the reason for establishing the Monument was, "in order that better provision may be made for the protection, preservation, and care of the ruins of the ancient buildings and other objects of prehistoric interest thereon". The National Park Service is considering expanding the boundary of the Casa Grande Ruins National Monument to include other areas containing cultural resources related to the Hohokam culture. By acquiring lands that are known to contain significant cultural resources, this project will meet the goal of the enabling legislation to protect and preserve cultural resources that are important to the interpretation of Casa Grande Ruins National Monument.
2. **2001-2005 Strategic Plan** states that the mission of Casa Grande Ruins National Monument is to protect and preserve the architectural and archeological resources of the Classic Period, and interpret the culture and history of the Hohokam people. The *Strategic Plan* also identifies the purpose of the Monument which is to protect the Casa Grande; provide scientific and public understanding of the natural, cultural, prehistoric, historic and archeological resources; and serve as a clearinghouse for Hohokam research, education and interpretation. The proposed project to acquire additional lands and preserve the cultural resources on those lands will meet the mission and purpose of the Monument as described in the *Strategic Plan* by enhancing the opportunity to protect, research, and interpret Hohokam archeological sites.
3. **2001 National Park Service Management Policies** states that the National Park Service will preserve and foster appreciation of the cultural resources in its custody, and will demonstrate its respect for the peoples traditionally associated with those resources, through appropriate programs of research, planning, and stewardship. The proposed project will allow Casa Grande Ruins National Monument the opportunity to manage additional significant cultural resources that might otherwise be lost or destroyed by increasing development. By acquiring these lands containing archeological sites and other cultural resources, Casa Grande Ruins National Monument will have the opportunity to conduct research, provide public interpretation and enjoyment, and preserve these resources for future generations. The Monument currently provides scientific and public understanding of its natural, cultural, prehistoric, historic, and archeological resources, and serves as a clearinghouse for Hohokam research, education and interpretation. These functions will be enhanced through the acquisition and protection of additional cultural resources.

## Need

This action is needed because of the rapid commercial and residential development that is being experienced in the area. This development has created new challenges for protecting the area's rich archeological resources. Many properties in the area that once contained important archeological resources have been developed which has subsequently destroyed any archeological data that these properties once contained. Once an archeological site is destroyed, the knowledge from that site can never be regained. The ongoing development in the area has also diminished the viewshed from the Monument, thereby creating a different feeling for visitors.

If the lands considered in this proposal are not acquired by the National Park Service, the potential exists for these properties to be developed. Development on these properties could destroy significant cultural resources and could also diminish the viewshed of the Monument. The archeological analysis completed for this project has shown that the cultural resources situated on these properties are important to the

interpretation of the area's past history and would promote enhanced understanding and appreciation of the Hohokam culture by current and future generations. Further, public scoping has shown that the proposed boundary expansion is supported by residents and city officials of both Coolidge and Florence, the Gila River Indian Community, and the State of Arizona.

## Project Objectives

Based on the Purpose and Need for the project and the scoping conducted with both the public and National Park Service staff, the following objectives have been identified to support the protection of cultural resources currently located outside the Monument's boundaries. The overall goal of the project is to acquire or protect lands that have significant cultural resources which are thematically related to the Casa Grande and the Hohokam culture. Specific objectives to meet this goal are to:

1. Promote the protection and preservation of cultural resources currently located outside the Monument's boundary.
2. Encourage increased understanding, knowledge, and interpretation of the Hohokam culture.
3. Foster community appreciation and support for the preservation of significant cultural resources.
4. Provide information and encouragement to Congressional representatives and state and local officials to gain their support for approval of a boundary expansion.
5. Promote interpretive opportunities for the Monument.
6. Support local or grassroots efforts to establish a National Heritage Area that would further protect cultural resources.

## Public Scoping

Scoping is a process to identify the resources that may be affected by a project proposal, and to explore possible alternative ways of achieving the proposal while minimizing adverse impacts. Casa Grande Ruins National Monument conducted both internal scoping with appropriate National Park Service staff and external scoping with the public and interested/affected groups and agencies.

Internal scoping was conducted by an interdisciplinary team of professionals from Casa Grande Ruins National Monument, Southern Arizona Parks, and the Intermountain Support Office. Interdisciplinary team members met on May 21, 2003 to discuss the purpose and need for the project; various alternatives; potential environmental impacts; past, present, and reasonably foreseeable projects that may have cumulative effects; and possible mitigation measures. Over the course of the project, team members also conducted individual site visits to view and evaluate the proposed acquisition sites.

External scoping was conducted through a series of seven public meetings beginning March 16, 2000. These meetings were held over a two year period to discuss the purpose of the project, various alternatives, environmental consequences, and public outreach. These meetings drew representatives from the cities of Coolidge and Florence; Pinal County; the Tohono O'otham Nation, the Gila River, Ak-Chin, and Salt River Indian Communities; as well as representatives from the Arizona State Historic Preservation Office, the Arizona State Museum, the Archeological Conservancy, the National Parks Conservation Association, the Arizona State Lands Department, and members of the general public. In addition to these meetings, a public scoping press release was issued in June 2003 to generate input on the preparation of this Environmental Assessment/ Assessment of Effect. During the 30-day scoping period, no comments were received. More information regarding scoping can be found in *Comments and Coordination*.

## Impact Topics Carried forward for Further Analysis

Impact topics for this project have been identified on the basis of federal laws, regulations, and orders; National Park Service *2001 Management Policies*; and National Park Service knowledge of resources at Casa Grande Ruins National Monument. Impact topics that are carried forward for further analysis in this Environmental Assessment/Assessment of Effect are listed below along with the reasons for which the impact topic is further analyzed.

### Cultural Resources

Section 106 of the National Historic Preservation Act, as amended in 1992 (16 USC 470 *et seq.*); the National Park Service's Director's Order #28 *Cultural Resource Management Guideline*; and National Park Service *2001 Management Policies* (NPS 2000b) require the consideration of impacts on historic properties that are listed on or eligible to be listed in the National Register of Historic Places. The National Register is the nation's inventory of historic places and the national repository of documentation on property types and their significance. The above-mentioned policies and regulations require federal agencies to coordinate consultation with State Historic Preservation Officers regarding the potential effects to properties listed on or eligible for the National Register of Historic Places.

The National Park Service, as steward of many of America's most important cultural resources, is charged to preserve historic properties for the enjoyment of present and future generations. Management decisions and activities throughout the National Park System must reflect awareness of the irreplaceable nature of these resources. The National Park Service will protect and manage cultural resources in its custody through effective research, planning, and stewardship and in accordance with the policies and principles contained in the *2001 Management Policies* and the appropriate Director's Orders.

For the purposes of the following discussion, cultural resources include archeological resources, historic structures, cultural landscapes, ethnographic resources, and museum collections. The topics of archeological resources; historic structures; and ethnographic resources, have been carried forward for further analysis, as described below. The topics of cultural landscapes and museum collections have been dismissed, as discussed in the following section *Impact Topics Dismissed from Further Analysis*.

#### Archeological Resources

In addition to the National Historic Preservation Act and the National Park Service *2001 Management Policies* (NPS 2000b), the National Park Service's Director's Order #28B *Archeology*, affirms a long-term commitment to the appropriate investigation, documentation, preservation, interpretation, and protection of archeological resources inside units of the National Park System. As one of the principal stewards of America's heritage, the National Park Service is charged with the preservation of the commemorative, educational, scientific, and traditional cultural values of archeological resources for the benefit and enjoyment of present and future generations. Archeological resources are nonrenewable and irreplaceable, so it is important that all management decisions and activities throughout the National Park System reflect a commitment to the conservation of archeological resources as elements of our national heritage.

In January 2002, archeologists from the National Park Service Western Archeological and Conservation Center completed a *Resource Protection Study Site Assessment* for properties being considered in the boundary adjustment project for Casa Grande National Monument (NPS 2003). The results of this study show that the majority of properties being considered for this project contains significant archeological sites. Protecting these archeological sites through acquisition will result in greater-than-negligible effects, while constructing fences and signs may adversely affect these sites. Because this project involves both beneficial and adverse impacts to archeological sites, this topic is carried forward for further analysis.

## Historic Structures

The term “historic structures” refers to both historic and prehistoric structures which are defined as constructions that shelter any form of human habitation or activity. This project involves one site, AZ U:15:1 (ASM), the Adamsville Ruin, which contains various historic structures including platform mounds, trash mounds, and ruins of adobe compounds. This site is a large Hohokam habitation site located near the intersection of Highway 287 and the Adamsville Road, and was listed in the National Register of Historic Places on August 28, 1970. The acquisition of this site will result in beneficial effects by protecting the site from potential future development. If this property is acquired, the construction of fences and signs may result in adverse effects to this site. Because this project involves both beneficial and adverse impacts to the historic site, this topic is carried forward for further analysis.

## Ethnographic Resources

Per the National Park Service’s Director’s Order #28 *Cultural Resource Management*, ethnographic resources are defined as any site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it. According to DO-28 and Executive Order 13007 on sacred sites, the National Park Service should try to preserve and protect ethnographic resources. Native American tribes traditionally associated with the properties being considered in this analysis were apprised of the proposed project in a letter dated March 28, 2002 and a public notice sent to them in June 2003.

The proposed boundary expansion will include properties that have significant ethnographic resources such as human remains, funerary objects, sacred objects, or other objects of cultural patrimony. The acquisition of these properties will result in beneficial effects from a greater level of protection for ethnographic resources, while the construction of fences and signs may result in adverse effects. Because this project involves both beneficial and adverse impacts to ethnographic resources, this topic is carried forward for further analysis.

## **Prime and Unique Farmlands**

The Farmland Protection Policy Act of 1981, as amended, requires federal agencies to consider adverse effects to prime and unique farmlands that would result in the conversion of these lands to non-agricultural uses. Prime or unique farmland is classified by the U.S. Department of Agriculture’s Natural Resources Conservation Service (NRCS), and is defined as soil that particularly produces general crops such as common foods, forage, fiber, and oil seed; unique farmland produces specialty crops such as fruits, vegetables, and nuts. According to the NRCS, the 80-acre parcel of privately-owned land on the Monument’s western boundary is considered prime farmland (NRCS 2003). Because this project has the potential for the National Park Service to acquire this land and change its land use to something other than prime farmland, the topic of prime and unique farmlands has been carried forward for further analysis.

## **Visual Resources**

According to *2001 Management Policies*, the National Park Service strives to understand, maintain, restore, and protect the inherent integrity of the natural resources, processes, systems, and values of the parks. Scenic views and visual resources are considered highly valued associated characteristics that the National Park Service should strive to protect. Also, in accordance with *2001 Management Policies*, the National Park Service strives to preserve natural ambient landscapes or lightscapes, which are natural resources and values that exist in the absence of human caused light (NPS 2000b).

The parcels of land that the Monument proposes to acquire are undeveloped parcels situated directly adjacent to the Monument’s boundary and also away from the Monument’s boundary. If the National Park Service acquires these lands, they will no longer be available for outside development which will have greater-than-negligible beneficial impacts on the Monument’s viewshed. Boundary fences and

signage for these new properties will also affect the visual resources associated with the Monument. For these reasons, the topic of visual resources has been carried forward.

## Visitor Use and Experience

According to *2001 Management Policies*, the enjoyment of park resources and values by people is part of the fundamental purpose of all park units. The National Park Service is committed to providing appropriate, high quality opportunities for visitors to enjoy the parks, and will maintain within the parks an atmosphere that is open, inviting, and accessible to every segment of society. Further, the National Park Service will provide opportunities for forms of enjoyment that are uniquely suited and appropriate to the superlative natural and cultural resources found in the parks.

Although the parcels of land proposed to be acquired will not be immediately opened to the general public, the Monument plans to eventually provide interpretation of the cultural and natural resources on some or all of these lands. Interpretation of these lands will be determined upon development of a General Management Plan for the Monument which is to be completed in the future. Future plans will also likely include a research element whereby researchers will be permitted to conduct studies for the purpose of increasing understanding of the Hohokam culture. With this research, the potential exists for visitors to benefit from increased understanding and interpretation of the Hohokam culture during its earlier Pioneer through Classic time periods; the thematic relationship between the Casa Grande and its associated outlying communities; and the extensiveness of the Hohokam occupation. Therefore, because the general public and researchers would benefit in the long-term from acquisition of these parcels, the topic of visitor use and experience has been carried forward for further analysis.

## Park Operations

By acquiring additional properties, Casa Grande Ruins National Monument will be responsible for managing a greater amount of land and resources. Management strategies for the acquired properties will need to be determined including how the Monument plans to protect, interpret, monitor, and maintain these properties. Depending upon the amount of land acquired, these duties may require the employment of additional employees. Supplementary funding will also be needed to purchase and maintain the properties as well as finance any additional employees. Because these changes will have a measurable effect on the staff and funding, the topic of park operations has been carried forward for further analysis.

## Impact Topics Dismissed From Further Analysis

Some impact topics have been dismissed from further consideration, as listed below. The rationale for dismissing these specific topics is stated for each resource.

### Topography, Geology, and Soils

According to the National Park Service's *2001 Management Policies*, the National Park Service will preserve and protect geologic resources and features from adverse effects of human activity, while allowing natural processes to continue (NPS 2000b). Casa Grande Ruins National Monument and all the land areas being considered for park expansion occur on Quaternary age alluvial fans and terraces. The proposed action and the other alternatives being considered would not alter the existing topography of the area or the geologic features. Therefore, because the project would result in negligible effects to topography and geology, these two topics have been dismissed.

According to the National Park Service's *2001 Management Policies*, the National Park Service will strive to understand and preserve the soil resources of park units and to prevent, to the extent possible, the unnatural erosion, physical removal, or contamination of the soil, or its contamination of other resources (NPS 2000b). Casa Grande Ruins National Monument, as well as the land areas under consideration for acquisition, has well-drained to excessively well-drained, moderately coarse to medium textured loamy

soils (SCS, 1991). The soils are mainly derived from materials deposited by water in past geologic times. They have been disturbed by agriculture and human habitation since prehistoric times. A drop in water table levels due most likely to groundwater pumping has affected soil moisture properties. The proposed action and the other alternatives being considered address only whether or not land expansion will occur and to what degree, not how the land will be treated; therefore, no measurable impacts to soils are expected. Some fencing and weed control will occur, but no soil disturbing activities of measurable consequence are proposed. For these reasons, the topic of soils has been dismissed.

## Vegetation

According to the National Park Service's *2001 Management Policies*, the National Park Service strives to maintain all components and processes of naturally evolving park unit ecosystems, including the natural abundance, diversity, and ecological integrity of plants (NPS 2000b). Casa Grande Ruins National Monument and the lands being considered for expansion are within the Lower Colorado River Valley subdivision of the Sonoran Desert (Turner 1994). Relatively simple and open plant communities dominated by such plants as creosotebush, white bursage, and saltbush characterize this biotic subdivision. As mentioned previously, the lands being considered for expansion of the Monument have been subjected to agricultural and other human disturbances since prehistoric times. Some are being actively farmed at present. The lower water table and altered surface water drainage due to agriculture and other land uses has likely contributed to the simplification of the plant communities in this area, as evidenced by the loss of mesquite bushes on the Monument grounds in the 1940s.

The proposed action and the other alternatives being considered address only whether or not land expansion will occur and to what degree. Fencing and weed control may disturb vegetation to a negligible degree, but no soil or vegetation disturbing activity of measurable consequence is proposed. For these reasons, the topic of vegetation has been dismissed.

## Wildlife

According to the National Park Service's *2001 Management Policies*, the National Park Service strives to maintain all components and processes of naturally evolving park unit ecosystems, including the natural abundance, diversity, and ecological integrity of animals (NPS 2000b). Wildlife associated with this area includes reptiles such as the common side-blotched lizard (*Uta stansburiana*) and the tiger whiptail lizard (*Cnemidophorus tigris*), the western diamondback rattlesnake (*Crotalus atrox*), the Mojave rattlesnake (*Crotalus scutulatus*), the common kingsnake (*Lampropeltis getula*), and the gophersnake (*Pituophis catenifer*). Birds include gambel's quail (*Callipepla gambelii*), mourning dove (*Zenaida macroura*), burrowing owl (*Athene cunicularia*), and the gila woodpecker (*Melanerpes uropygialis*), among numerous others. Mammals include the round-tailed ground squirrel (*Spermophilus tereticaudus*), desert cottontail (*Sylvilagus audubonii*), antelope jack rabbit (*Lepus alleni*), kit fox (*Vulpes macrotis*), badger (*Taxidea taxus*), white-throated woodrat (*Neotoma albigula*), and the coyote (*Canis latrans*) (MacMahon 1997).

The proposed action and the other alternatives being considered address only whether or not land expansion will occur and to what degree. No soil or vegetation disturbing activity of measurable consequence is involved thus the impacts to wildlife and wildlife habitat will be negligible. This topic has been dismissed from further analysis.

## Threatened, Endangered, and Candidate Species, and Species of Special Concern

The Endangered Species Act of 1973 requires examination of impacts on all federally-listed threatened, endangered, and candidate species. Section 7 of the Endangered Species Act requires all federal agencies to consult with the U.S. Fish and Wildlife Service (or designated representative) to ensure that any action authorized, funded, or carried out by the agency does not jeopardize the continued existence of listed species or critical habitats. In addition, the *2001 Management Policies* and Director's Order #77 *Natural Resources Management Guidelines* require the National Park Service to examine the impacts on federal candidate species, as well as state-listed threatened, endangered, candidate, rare, declining, and



sensitive species (NPS 2000b). For the purposes of this analysis, the U.S. Fish and Wildlife Service and the Arizona Department of Game and Fish were contacted with regards to federally- and state-listed species to determine those species that could potentially occur on or near the proposed parcels of land to be acquired.

A letter from the U.S. Fish and Wildlife Service dated May 29, 2003 indicated that there are no records of threatened or endangered species, or those that are proposed to be listed as such under the Endangered Species Act of 1973 located on the proposed parcels for acquisition (USFWS 2003).

Although no species of concern are known to occur in the specific project areas, a letter from the Arizona Department of Game and Fish dated June 9, 2003, indicated that eleven special status species occur within the broader area, as based on coarse habitat characteristics and species range information (AZ G&F 2003). These eleven species include the Longfin Dace (*Agosia Chrysogaster*), the Common Black-hawk (*Buteogallus Anthracinus*), the San Carlos Wild-buckwheat (*Eriogonum Capillare*), the Roundtail Chub (*Gila Robusta*), the California Leaf-nosed Bat (*Macrotus Californicus*), the Western Small-footed Myotis (*Myotis Ciliolabrum*), the Cave Myotis (*Myotis Velifer*), the Yuma Myotis (*Myotis Ymanensis*), the Pocketed Free-tailed Bat (*Nyctinomops Femorosaccus*), the Mexican Spotted Owl (*Strix Occidentalis Lucida*), and the Aravaipa Wood Fern (*Thelypteris Puberula Var Sonorensis*). Additionally, the U.S. Fish and Wildlife Service's Pinal County Species List indicates that three species occur within the broader area. These species include the Cactus Ferruginous Pygmy-owl (*Glaucidium Brasilianum Cactorum*), the Lesser Long-nosed Bat (*Leptonycteris Curasoae Yerbabuenae*), and the Acuna Cactus (*Echinomastus Erectocentrus var. Acunensis*). None of these species are known to occur in the proposed project locations, and these locations do not contain suitable habitat for these species due to their disturbed condition and lack of vegetation and water.

Further protection under the Migratory Bird Treaty Act makes it unlawful to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products. In addition, this act serves to protect environmental conditions for migratory birds from pollution or other ecosystem degradations. The above-listed bird species including the common black-hawk, the Mexican spotted owl, and the cactus ferruginous pygmy-owl range over large areas of the region and are potential transients in the Casa Grande Ruins National Monument and proposed parcels. However, there are no known nesting sites in these areas, and these lands are not vital for foraging or roosting. Construction-related noise could potentially disturb transient bird species, but these adverse impacts would be 1) temporary, lasting only as long as construction, and 2) negligible, because suitable habitat for transient birds is found throughout the region.

Because no threatened, endangered, or other species of concern are known to occur in the project area, the topic of threatened and endangered species was dismissed from further analysis.

## Water Resources

National Park Service policies require protection of water quality consistent with the Clean Water Act. The purpose of the Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters". To enact this goal, the U.S. Army Corps of Engineers has been charged with evaluating federal actions that result in potential degradation of waters of the United States and issuing permits for actions consistent with the Clean Water Act. The U.S. Environmental Protection Agency also has responsibility for oversight and review of permits and actions, which affect waters of the United States. For the purpose of this discussion, water quality, water quantity, and drinking water are addressed.

The Casa Grande Ruins National Monument and the lands being considered to facilitate park expansion occur on Quaternary alluvial deposits within the Gila River Valley. The affected area is relatively flat and has poorly developed tributary channels. Erosion is mostly limited to sheet wash and minor rills on soils lacking sufficient ground cover, mainly from intense seasonal storms. The alluvial deposits serve as a ground water aquifer. Water chemical quality and quantity, as well as the depth to groundwater measured in wells, varies greatly throughout the region and from well to well within a given area.

The proposed action and the other alternatives being considered address only whether or not land expansion will occur and to what degree. No soil, vegetation, or other disturbances are proposed that would affect erosion. No measurable alteration of surface or subsurface water quality or quantity is anticipated. For this reason, the topic of water resources has been dismissed from further analysis.

## Wetlands

For regulatory purposes under the Clean Water Act, the term wetlands means "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."

Executive Order 11990 *Protection of Wetlands* requires federal agencies to avoid, where possible, adversely impacting wetlands. Further, Section 404 of the Clean Water Act authorizes the U.S. Army Corps of Engineers to prohibit or regulate, through a permitting process, discharge or dredged or fill material or excavation within waters of the United States. National Park Service policies for wetlands as stated in *2001 Management Policies* and Director's Order #77-1 *Wetlands Protection*, strive to prevent the loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. In accordance with DO #77-1 *Wetlands Protection*, proposed actions that have the potential to adversely impact wetlands must be addressed in a Statement of Findings for wetlands.

No wetlands are located on any of the lands that may be acquired as part of this project. Therefore, because impacts to wetlands from this project would be negligible, a Statement of Findings for wetlands will not be prepared, and the impact topic of wetlands has been dismissed.

## Floodplains

Executive Order 11988 *Floodplain Management* requires all federal agencies to avoid construction within the 100-year floodplain unless no other practicable alternative exists. The National Park Service under *2001 Management Policies* and Director's Order #77-2 *Floodplain Management* will strive to preserve floodplain values and minimize hazardous floodplain conditions. According to Director's Order #77-2 *Floodplain Management*, certain construction within a 100-year floodplain requires preparation of a Statement of Findings for floodplains.

The lands that may be acquired as part of this project are not located on active floodplains, including the Gila River floodplain. Therefore, because the project results in a negligible effect to floodplains, a Statement of Findings for floodplains will not be prepared, and the topic of floodplains has been dismissed.

## Cultural Landscapes

According to the National Park Service's Director's Order #28 *Cultural Resource Management Guideline*, a cultural landscape is a reflection of human adaptation and use of natural resources, and is often expressed in the way land is organized and divided, patterns of settlement, land use, systems of circulation, and the types of structures that are built. A cultural landscape report and an inventory of Casa Grande Ruins were conducted by the National Park Service (NPS 1997). The report concluded that the cultural landscape at Casa Grande Ruins is eligible for the National Register of Historic Places, and should be considered a contributing element to the National Historic Landmark status. Currently, the properties being considered for transfer or acquisition have not been assessed in terms of their contribution to a cultural landscape. It should be noted that these properties are significant and could be contributing properties to a cultural landscape; however, formal inventories of these lands will occur following acquisition. Therefore, for the purpose of this analysis, the topic of cultural resources has been dismissed because the transfer and acquisition of the proposed properties will not impact the cultural landscape at Casa Grande Ruins or any formally documented cultural landscapes.

## Museum Collections

According to Director's Order #24 *Museum Collections*, the National Park Service requires the consideration of impacts on museum collections (historic artifacts, natural specimens, and archival and manuscript material), and provides further policy guidance, standards, and requirements for preserving, protecting, documenting, and providing access to, and use of, National Park Service museum collections. Since this only involves the transfer and/or acquisition of properties, there will be no impacts to existing collections presently managed by the Monument. Therefore, this topic was dismissed as an impact topic.

## Indian Trust Resources

Secretarial Order 3175 requires that any anticipated impacts to Indian trust resources from a proposed project or action by the Department of Interior agencies be explicitly addressed in environmental documents. The federal Indian trust responsibility is a legally enforceable fiduciary obligation on the part of the United States to protect tribal lands, assets, resources, and treaty rights, and it represents a duty to carry out the mandates of federal law with respect to American Indian and Alaska Native tribes.

There are no Indian trust resources at Casa Grande Ruins National Monument. The lands comprising the Monument or the proposed properties are not held in trust by the Secretary of the Interior for the benefit of Indians due to their status as Indians. Therefore, the project will have negligible effects on Indian trust resources, and this topic was dismissed as an impact topic.

## Air Quality

The Clean Air Act of 1963 (42 U.S.C. 7401 *et seq.*) was established to promote the public health and welfare by protecting and enhancing the nation's air quality. The act establishes specific programs that provide special protection for air resources and air quality related values associated with National Park Service units. Section 118 of the Clean Air Act requires a park unit to meet all federal, state, and local air pollution standards. The Casa Grande Ruins National Monument and proposed acquisition lands are designated as a Class II air quality area under the Clean Air Act. A Class II designation indicates the maximum allowable increase in concentrations of pollutants over baseline concentrations of sulfur dioxide and particulate matter as specified in Section 163 of the Clean Air Act. Further, the Clean Air Act provides that the federal land manager has an affirmative responsibility to protect air quality related values (including visibility, plants, animals, soils, water quality, cultural resources, and visitor health) from adverse pollution impacts (EPA 2000).

Construction activities related to fence and sign construction such as hauling material and operating equipment could result in temporary increases of vehicle exhaust, emissions, and fugitive dust in the general project area. Any exhaust, emissions, and fugitive dust generated from construction activities will be temporary and localized, and would likely dissipate rapidly because air stagnation at or near the Monument is rare. Overall, the project could result in a negligible degradation of local air quality, and such effects would be temporary, lasting only as long as construction. The Class II air quality designation for the Monument and proposed land acquisitions would not be affected by the proposal. Therefore, air quality was dismissed as an impact topic.

## Soundscape Management

In accordance with 2001 *Management Policies* and Director's Order #47 *Sound Preservation and Noise Management*, an important component of the National Park Service's mission is the preservation of natural soundscapes associated with national park units (NPS 2000b). Natural soundscapes exist in the absence of human-caused sound. The natural ambient soundscape is the aggregate of all the natural sounds that occur in park units, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive and can be transmitted through air, water, or solid materials. The frequencies, magnitudes, and durations of human-

caused sound considered acceptable varies among National Park Service units as well as potentially throughout each park unit, being generally greater in developed areas and less in undeveloped areas.

The protection of a natural ambient soundscape and/or opportunity for visitors to experience natural sound environments is not a priority; however, acquisition of these lands will not increase the noise levels. Most of the proposed parcels of land to be acquired are located next to major roads. These parcels of land are generally small in size (ranging between 2 acres and 126 acres) and will be acquired to preserve and possibly interpret the prehistoric cultural resources. Since most of these parcels are located within close proximity to State Route 87 and 287, the visitors will generally not visit these sites seeking the quieter, intermittent sounds of nature.

Existing sounds in the area of the proposed parcels of land are generated from vehicular traffic (from vehicles traveling to commercial businesses such as Wal-Mart and from vehicles on the highway adjacent to the proposed parcels of land), people, climate controls on the buildings, domestic animals such as dogs, some wildlife such as birds, and wind. Because the area already contains man-made noises, the acquisition of these parcels is not expected to appreciably increase the noise levels in the general area.

During construction of the fences, human-caused sounds will likely increase due to construction activities, equipment, vehicular traffic, and construction crews. Any sounds generated with construction would be temporary, lasting only as long as the construction activity is generating the sounds. Because protection of a natural ambient soundscape and/or opportunity for visitors to experience natural sound environments is not an objective of the Monument, and any construction-related sounds would have short-term and negligible impacts, soundscape management was dismissed as an impact topic.

## **Socioeconomic Environment**

The proposed action would not appreciably change local and regional land use or measurably impact local businesses or other agencies. Implementation of the proposed action could provide a negligible beneficial impact to the economies of nearby Coolidge, Arizona, as well as Florence, Arizona due to an increase in employment opportunities for the construction of fences as well as any additional permanent employees that are hired by the Monument to manage the new lands. Increased revenues for local businesses and governments may occur from additional visitors to the area or visitors that may be attracted to stay longer if the acquired properties are interpreted and open to the public. Because any properties that are acquired by the Monument will be preserved and not commercially developed by outside companies, this may have a negligible adverse impact on the local economy because potential businesses will not have the opportunity to purchase and develop these lands. All told, these effects to land use and the local economy are negligible because the amount of land being acquired is minimal in comparison to the greater cities of Coolidge and Florence, and the amount of workforce or visitors will not appreciably affect the revenues generated by these cities. Therefore, because the impacts to the socioeconomic environment would be negligible, this topic has been dismissed.

## **Environmental Justice**

Executive Order 12898 *General Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* requires all federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. Because the acquisition of these lands and the cultural resources contained on these lands will be maintained and interpreted by the National Park Service for all peoples regardless of race or income, the proposed action would not have disproportionate health or environmental effects on minorities or low-income populations or communities.

# ALTERNATIVES CONSIDERED

## Alternatives Development Process

Beginning in the Spring of 2001, several internal (National Park Service) and external (public) meetings were conducted to discuss the project and develop possible alternatives. Using the information gathered from these meetings in addition to research conducted by archeological experts, a team of National Park Service employees met in May 2003 to identify project objectives as described in the *Purpose and Need*; refine a list of alternatives that could potentially meet these objectives; and discuss potential impacts resulting from these alternatives.

To develop the alternatives, the interdisciplinary team first developed a series of evaluation criteria by which to evaluate the significance of various properties that could potentially be acquired. These criteria were based on the Purpose and Need for the project to protect significant cultural resources that are relevant to the interpretation of the Monument. For a property to be considered, it must:

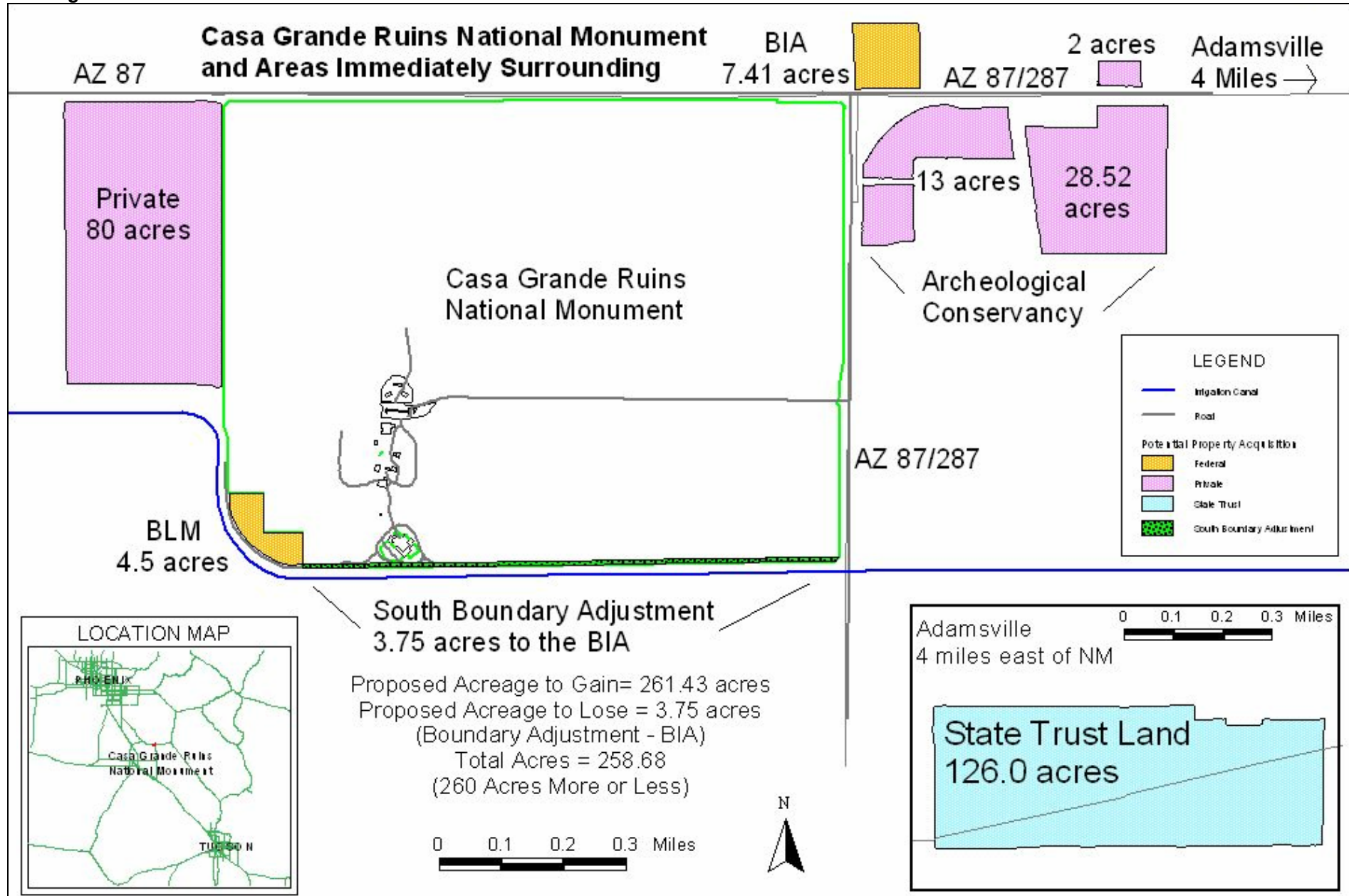
- Date from the Classic or Pre-Classic Period of Hohokam occupancy of the area, which is the same period in which the Great House and the community at Casa Grande Ruins thrived; or
- Be a part of the Casa Grande Irrigation Community, which includes sites located along the prehistoric canal; or
- Represent a greater continuum of Hohokam culture; and
- Not be significantly disturbed; and
- May be available for sale or donation. Those sites that the National Park Service was not able to obtain permission to access for the study were not included in the study.

Sites or properties were excluded from the study if they had already been developed or destroyed or if landowners denied access to a property before appropriate studies could be conducted to evaluate the property's significance. Feasibility to manage or administer the sites by National Park staff was also a consideration during the process.

Given these criteria, six properties were found to have utmost significance due to their relationship to Casa Grande Ruins National Monument; the significance of the archeological artifacts located on those sites; and their potential for acquisition on a willing seller/transference basis. These six properties are described below and are shown on Figure 2. The only property being considered for transference out of National Park Service management is the 3.75 acres on the southern boundary of the Monument. The land acreages given for each parcel are approximations and may change during the acquisition process.

- **National Park Service Land (3.75 acres) on the South Boundary of the Monument** – This parcel includes approximately 3.75 acres and can be described as a linear “slice” of the southern boundary of the Monument. This land is managed by the National Park Service and is located adjacent to the Pima Lateral Canal, an irrigation canal that is managed by Bureau of Indian Affairs. A dirt road encompasses most of this property which is used by employees of Bureau of Indian Affairs to perform maintenance duties on the canal. Surface archeological resources that may have once been intact have been disturbed by the construction, maintenance, and continual use of the dirt road. Despite this surface disturbance, some subsurface materials may still be intact. Because the proposed new land manager is a federal agency, these resources will be afforded protection under Sections 110 and 106 of the National Historic Preservation Act before any undertaking is implemented. If resources are available (time, money, staff), the National Park Service will conduct archeological testing prior to transference of this property to determine the extent, nature, and integrity of possible subsurface cultural materials on this property.

Figure 2 – Alternatives





- **Bureau of Indian Affairs Land (7.41 acres) on the Northeast Corner of the Monument** – This property includes approximately 7.41 acres of land managed by Bureau of Indian Affairs. It is roughly a square block of land located to the northeast corner of the Monument, north of State Highway 87/287. Previous investigations of the site in 1996 by Northland Research Incorporated indicated that this parcel of land contains significant cultural materials and archeological resources that extremely exceptional and warrant full federal protection (NRI 2001). These cultural resources comprise portions of what is commonly referred to as the Horvath Site.
- **Bureau of Land Management Land (4.5 acres) on the Southwest Corner of the Monument** – This property includes approximately 4.5 acres of land adjacent to the Monument's southwest corner, on the northeast side of the Pima Lateral Canal. This property currently interrupts what could be a contiguous boundary line for the Monument, and contains a portion of an archeological site, the majority of which is situated within the Monument's boundaries.
- **Private Land (80 acres) on the West Side of the Monument** – This property includes approximately 80 acres and is privately owned. This property is currently cultivated by the present owner, and contains cultural materials and archeological sites that are significant to the interpretation of the Monument including a portion of prehistoric Canal Casa Grande. This parcel of land also lies within the viewshed of the Great House at the Monument. In the past, other development opportunities have been investigated for this site including a corrections facility.
- **Grewe Site (43.52 acres) on the East Side of the Monument** – This property includes three separate parcels which were donated to the Archeological Conservancy by the Cole family (28.52 acres), Wal-Mart (13 acres), and the Faul family (2 acres). Together, these parcels comprise what is commonly known as the Grewe Site, which is located to the east, but not adjacent to the Monument boundary. Archeological excavations conducted between 1995 and 1997 revealed an extensive prehistoric residential district that continues into the Monument (NRI 2001). The significance of this site is that it is an ancestral site for the Casa Grande and covers the earliest manifestations of Hohokam culture, back to about AD 300. Within the whole Casa Grande-Grewe Community, the whole continuum of Hohokam remains are represented, which is a unique resource within the greater Hohokam culture area.
- **Adamsville Site (126 acres) Four Miles East of the Monument** – The Adamsville Site is located approximately four miles east of the Monument. The entire site comprises approximately 155 acres; however, only 126 acres are owned by the state and considered to be State Trust Lands. The remaining lands are privately owned and are not considered part of this proposal. The Adamsville Site is named after the nineteenth century town that was once located roughly ½ mile north of the site, and is considered to be the second largest Hohokam housing area along the prehistoric Canal Casa Grande, second only to the combined communities of Grewe and Casa Grande. Although this site is not located adjacent to or within the viewshed of the Monument, it is a short drive from the Monument and can be directly accessed from State Highway 287.

## Alternatives Carried Forward

Using the aforementioned six properties in various combinations, a total of four alternatives were developed including the No Action Alternative (Alternative 1) and three action alternatives (Alternatives 2, 3, and 4). These four alternatives are carried forward for further evaluation in this Environmental Assessment/ Assessment of Effect, and a description of these four alternatives is included in the following sections. A summary table comparing alternative components (Table 1) is presented at the end of this chapter in addition to a comparative summary table of potential impacts (Table 2). Please refer to Figure 2 for a map of the various parcels included in the alternatives. The *Resource Protection Study* also includes a more detailed description of the alternatives development process, and been published simultaneously, but separately from the Environmental Assessment/Assessment of Effect.



## **Alternative 1 – No Action (Federal Land Transfers)**

The No Action Alternative includes three federal land transfers. These actions are included in the No Action Alternative because they will occur regardless of whether additional private or state lands are purchased to protect significant archeological resources. These three actions include acquiring the 4.5 acres of Bureau of Land Management land located at the southwest corner of the Monument; acquiring the 7.41 acres of Bureau of Indian Affairs land located to the northeast of the Monument; and transferring the 3.75 acres of National Park Service land on the southern edge of the Monument to the Bureau of Indian Affairs. This alternative also includes the list of actions described in the following section *Actions Common to All Alternatives*.

Under this alternative, Casa Grande Ruins National Monument will acquire approximately 11.91 acres and will transfer approximately 3.75 acres out of their ownership for a total gain of 8.16 acres. The federal agencies involved in these land transfers have been contacted by the National Park Service during this process and have given their initial approval to inter-agency land transfers.

## **Alternative 2 – Federal Land Transfers and Contiguous Property**

Alternative 2 includes the actions considered under the No Action Alternative in addition to acquiring the 80 acres of private land located to the west of the Monument. In other words, only those properties that are contiguous or adjacent to the Monument would be acquired under this alternative. This alternative also includes the list of actions described in the following section *Actions Common to All Alternatives*.

This alternative was designed to protect archeological resources that are under the greatest threat to development (i.e., private land) and to preserve the viewshed of the Monument. This alternative also minimizes the amount of land to be acquired in order to reduce purchasing costs. Under this alternative, Casa Grande Ruins National Monument would acquire a total of 88.16 acres of federal and private land.

## **Alternative 3 – Federal Land Transfers, Contiguous Property, and Grewe Site**

Alternative 3 includes the actions considered under Alternative 2 in addition to acquiring the approximate 43.52 acres of the Grewe Site which is currently managed by the Archeological Conservancy. This alternative builds from Alternative 2 by acquiring the four properties that are contiguous to the Monument in addition to the Grewe Site which is located near, but not directly adjacent to the Monument. This alternative also includes the list of actions described in the following section *Actions Common to All Alternatives*.

This alternative was designed to preserve a greater amount of archeological resources in order to promote enhanced understanding and interpretation of the Hohokam culture in addition to better preserving the Monument's viewshed. Under this alternative, Casa Grande Ruins National Monument would acquire a total of 131.68 acres of federal and private land.

## **Alternative 4 – Federal Land Transfers, Contiguous Property, Grewe Site, and Portions of Adamsville**

Alternative 4 includes the actions considered under Alternative 3 in addition to acquiring the approximate 126 acres of the Adamsville Site which is currently managed as State Trust Land. This Alternative builds from Alternative 3 by acquiring the four properties that are contiguous to the Monument and the Grewe Site, in addition to the Adamsville Site which is located approximately four miles east of the Monument. This alternative also includes the list of actions described in the following section *Actions Common to All Alternatives*.

This alternative was designed to protect the greatest amount of archeological resources that are thematically tied to the Monument and offer the greatest interpretive opportunities, while providing

management options that are feasible to National Park Service staff. Under this alternative, Casa Grande Ruins National Monument would acquire a total of 257.68 acres of federal, state, and private land.

## Actions Common to All Alternatives

All of the alternatives carried forward (Alternatives 1, 2, 3 and 4) include similar actions that will be performed if any of these alternatives is selected. These actions include land acquisition procedures, fencing, signing, maintaining the properties, restoring the lands by promoting native vegetation, and supporting local or grassroots efforts to establish a National Heritage Area. The extent of these actions for each alternative will vary because each alternative includes a different amount of land that is currently managed by different parties. Specific distances, materials, locations, and design of these components will be determined following land acquisition procedures.

- **Land Acquisition** – In order to acquire land, the National Park Service must receive Congressional approval. This usually involves conducting meetings and developing reports for review by Congressional representatives. Land acquisition also entails meeting with prospective land owners, developing contracts, and establishing the method of land transferal such as through purchase, donation, and/or exchange. The actual method of acquiring the land will be determined in consultation with the land owners.
- **Fencing** – Once a property is acquired, fencing may be used to protect sensitive archeological resources and delineate the property boundary. Some of the properties under consideration already have boundary fences.
- **Signage** – Signs may be erected to inform the public of new property ownership, and will be developed in accordance with National Park Service Policy Director's Order-52C *Park Signage*.
- **Maintenance** – Properties that are acquired will be cleaned, maintained, and monitored. This will entail removing and disposing of any refuse; conducting further natural and cultural resource inventories as needed; and inspecting site conditions.
- **Restoration** – Properties that are acquired will be inactively restored to their native or natural condition. The establishment of native vegetation will be promoted, but will not be actively planted. Exotic or noxious vegetation will be removed in accordance with National Park Service policies.
- **National Heritage Area Support** – National Heritage Areas are places federally designated to preserve an important aspect of America's past and share it with visitors. Legally, National Heritage Areas are designated by Congress and funded through the National Park Service. The Alliance of National Heritage Areas (ANHA) serves to coordinate Heritage Area efforts, functions as a support group, and is the collective interface with the National Park Service. While the funding for a National Heritage Area is distributed through the National Park Service, a National Heritage Area cannot be directly sponsored by a unit of the National Park Service; therefore, the establishment of a local Heritage Area to preserve archeological resources must be initiated and coordinated through local grassroots organizations outside the National Park Service. Congress funds National Heritage Areas through separate legislation, and the National Park Service is the instrument through which the funds are distributed. The National Heritage Area concept grew out of an interest expressed at scoping meetings by archeologists, local citizens, and representatives of tribal and local governments that the area's rich cultural resources should receive consideration as the communities of Coolidge and Florence grow, and that a Heritage Area may be a way of providing a coordinated approach to protecting sensitive sites while also encouraging more and longer tourist visits to the area. A separate study may be required to determine the eligibility of a National Heritage Area designation.

## Alternatives Considered and Dismissed

An archeological inventory of the greater project area was conducted by National Park Service staff to determine which properties may contain significant cultural resources that are thematically linked to Casa Grande Ruins National Monument. The results of these studies showed that numerous properties did contain important archeological sites (NPS 2003); however, many of these properties were dismissed because they did not meet the one or more of the evaluation criteria listed in the *Introduction* to this chapter.

The following is a list of properties that were initially considered to be acquired as part of the boundary expansion effort, but were ultimately dismissed from further analysis at this time. Reasons for their dismissal are provided in the following descriptions.

- **Sacaton Village Site** – This site is located to the south across from Casa Grande Ruins National Monument in the commercial development that includes Safeway, Safeway Gasoline station, Blockbuster Video, and currently under construction, a Kentucky Fried Chicken and a Taco Bell. Because portions of this site have been destroyed by these developments and because the owners have no interest in selling their land, this site was dismissed from further consideration.
- **Vah Ki Inn Site** – This site is located opposite the southern boundary of the Monument and the Pima Lateral Canal. This site has been substantially altered by development; therefore, it was dismissed from further consideration.
- **Property North of the Monument** – The property situated north of the Monument contains is privately owned and contains significant archeological resources related to the Monument in addition to portions of the prehistoric Canal Casa Grande. The National Park Service looked into acquiring this property, but the land owner was not interested in selling it; therefore, it was dismissed from further consideration. However, if the land owner does decide to sell, and the property meets the criteria for acquisition, then the park would reconsider acquiring this property.
- **Sites to the East of the Monument along the Canal Casa Grande** – Roughly 70-80 archeological sites were inventoried along the prehistoric Canal Casa Grande to the east and northeast of the Monument. These sites consist of Classic Period village sites of various sizes and other site types including prehistoric agricultural sites that were important prehistorically to meeting the dietary needs of area residents. The National Park Service was initially interested in acquiring some of these sites because these types of dry farming sites do not exist at Casa Grande Ruins National Monument. The Adamsville Site is included in this list of sites and is being considered for acquirement; however, the remainder of the sites was not feasible to obtain for a variety of reasons including fiscal constraints; property owners uninterested in selling; and difficulty managing or interpreting these sites. For these reasons, these sites were dismissed from further consideration.
- **Remaining 80 acres of Private Land** – The private parcel of land to the west of the Monument contains a total of 160 acres. The 80 acres closest in proximity to the Monument are being considered for acquisition under Alternatives 2, 3, and 4. The remaining 80 acres of this land does contain a large portion of the Canal Casa Grande, but acquiring it at this time is cost-prohibitive. If cost issues were to change, then the park would reconsider acquiring this property.
- **Remaining Portions of Adamsville** – The Adamsville Site encompasses a total of 155 acres. Approximately 126 acres of the site are being considered for acquisition under Alternatives 2, 3, and 4, and have received support for transfer from the State Governor's office. The remaining 29 acres of the site are not being considered for acquisition because of land owners who are not willing to sell; lack of cultural integrity; and/or lack of political support.

## Mitigation Measures for All Alternatives

The following mitigation measures have been developed to minimize the degree and/or severity of adverse effects, and would be employed upon implementation of the selected alternative.

- To mitigate adverse effects to the 80 acres of prime farmland to the west of the Monument resulting from taking this land out of agricultural production, the National Park Service consulted with the Natural Resources Conservation Service to develop an appropriate level of mitigation. During consultation, the two agencies determined that National Park Service will inactively preserve the agriculture-related infrastructure (irrigation canals) on the property so that the land could be returned to agriculture in the future, if needed. While under National Park Service management, however, this property will be preserved for its viewshed and protection of cultural resources, and the practice of farming this land will not be continued.
- Exotic or noxious weed removal will occur pursuant to National Park Service policies. Ground disturbance will be minimized to the extent possible to successfully remove the weeds while not diminishing the integrity of the archeological sites or other cultural resources.
- Erection of fencing or signage will take place so as not to diminish the integrity of any archeological sites or other cultural resources. The type of fencing and signage will be determined following acquiring the property and will meet National Park Service standards.
- Fugitive dust generated during removal of weeds or erection of fencing and signs will be minimized to the extent possible.
- To ensure that archeological sites will not be directly impacted by the construction of fencing and signage, a cultural resources specialist with archeological expertise will monitor ground-disturbing activities for fencing and signage. Should construction unearth previously undiscovered archeological resources, work would be stopped in the area of any discovery and the Monument would consult with the State Historic Preservation Office, as necessary, according to §36 CFR 800.13, Post Review Discoveries. In the event that human remains are discovered during ground-disturbing activities, provisions outlined in the Native American Graves Protection and Repatriation Act (1990) along with other federal, state, and local laws would be followed.
- According to *2001 Management Policies*, the National Park Service will strive to construct facilities (fencing, signage) with sustainable designs and systems to minimize potential environmental impacts. Development will not compete with or dominate existing features, or interfere with natural processes, such as the seasonal migration of wildlife or hydrologic activity associated with wetlands. To the extent possible, the design and management of facilities will emphasize environmental sensitivity in construction, use of nontoxic materials, resource conservation, recycling, and integration of visitors with natural and cultural settings. The National Park Service also strives to reduce energy costs, eliminate waste, and conserve energy resources by using energy-efficient and cost-effective technology. Energy efficiency is incorporated into the decision-making process during the design and acquisition of buildings, facilities, and transportation systems that emphasize the use of renewable energy sources.

## Alternative Summaries

Table 1 summarizes the major components of Alternatives 1, 2, 3, and 4, and compares the ability of these alternatives to meet the project objectives, as identified in the *Purpose and Need* chapter. As shown in the following table, Alternative 4 best meets each of the objectives identified for this project, while the No Action Alternative only minimally addresses the objectives. Please note that all alternatives contain some common actions including land acquisition processes, fencing, signage, maintenance, restoration, and Heritage Area support, which are not specifically mentioned in the table. Acreages shown are approximations.

**Table 1 – Alternatives Summary and Extent to Which Each Alternative Meets Project Objectives**

<b>Alternatives Summary</b>				
<b>Action</b>	<b>Alternative 1 – No Action</b>	<b>Alternative 2 – Contiguous Properties Only</b>	<b>Alternative 3 – Contiguous Properties and Grewe Site</b>	<b>Alternative 4 – Contiguous Properties, Grewe Site, and Adamsville Site</b>
<b>Acquire:</b>	-4.5 ac BLM land -7.41 ac BIA land	-4.5 ac BLM land -7.41 ac BIA land -80 ac private land	-4.5 ac BLM land -7.41 ac BIA land -80 ac private land -43.52 ac Grewe Site	-4.5 ac BLM land -7.41 ac BIA land -80 ac private land -43.52 ac Grewe Site -126 ac Adamsville Site
<b>Transfer:</b>	3.75 ac NPS land to BIA	3.75 ac NPS land to BIA	3.75 ac NPS land to BIA	3.75 ac NPS land to BIA
<b>Total Acquired:</b>	8.16 acres	88.16 acres	131.68 acres	257.68 acres
<b>Meets Project Objectives</b>				
<b>Objective</b>	<b>Alternative 1</b>	<b>Alternative 2</b>	<b>Alternative 3</b>	<b>Alternative 4</b>
Promote the protection and preservation of cultural resources.	This alternative least meets this objective because it preserves the fewest cultural resources.	This alternative meets this objective better than Alternative 1 because it preserves a greater number of cultural resources.	This alternative meets this objective better than Alternatives 1 or 2 because it preserves a greater number of cultural resources.	This alternative best meets this objective because it will preserve the greatest number of cultural resources.
Encourage increased understanding, knowledge, and interpretation of the Hohokam culture.	This alternative least meets this objective because fewer properties offer less opportunity for greater understanding and appreciation.	This alternative better meets this objective than Alternative 1 because it offers more properties from which to gain knowledge and appreciation.	This alternative better meets this objective than Alternatives 1 or 2 because it offers more properties from which to gain knowledge and appreciation.	This alternative best meets this objective because more properties will offer greater opportunity for understanding and appreciation.
Foster community appreciation and support for the preservation of cultural resources.	Because the community strongly supports the preservation of cultural resources, this alternative least meets this objective.	This alternative better meets this objective than Alternative 1 because more properties will be acquired, which is supported by the community.	This alternative better meets this objective than Alternatives 1 or 2 because more properties will be acquired, which is supported by the community.	Because the community strongly supports the preservation of cultural resources, this alternative best meets this objective.
Provide information to Congressional, state, and local representatives.	Similar information will be provided to representatives for all of the alternatives.	Similar information will be provided to representatives for all of the alternatives.	Similar information will be provided to representatives for all of the alternatives.	Similar information will be provided to representatives for all of the alternatives.
Promote interpretive opportunities for the Monument.	This alternative least meets this objective because fewer interpretive opportunities exist with a fewer numbers/types of cultural properties.	This alternative meets this objective better than Alternative 1 because more properties will offer greater interpretive flexibility.	This alternative meets this objective better than Alternatives 1 or 2 because more properties will offer greater interpretive flexibility.	This alternative best meets this objective because more interpretive opportunities exist with a greater numbers/types of cultural properties.
Support efforts to establish National Heritage Area.	Equal support for National Heritage Area establishment will occur for all of the alternatives.	Equal support for National Heritage Area establishment will occur for all of the alternatives.	Equal support for National Heritage Area establishment will occur for all of the alternatives.	Equal support for National Heritage Area establishment will occur for all of the alternatives.

ac = acre; BIA = Bureau of Indian Affairs; BLM = Bureau of Land Management; NPS = National Park Service

Table 2 summarizes the anticipated environmental impacts for each of the four alternatives carried forward. Only those impact topics that have been carried forward for further analysis are included in this table. The *Environmental Consequences* chapter provides a more detailed explanation of these impacts.

**Table 2 – Environmental Impact Summary by Alternative**

Impact Topic	Alternatives			
	Alternative 1 – No Action	Alternative 2 – Contiguous Properties Only	Alternative 3 – Contiguous Properties and Grewe Site	Alternative 4 – Contiguous Properties, Grewe Site, and Adamsville Site
<b>Archeological Resources</b>	Negligible to minor beneficial effects from the preservation of 2 archeological sites	Negligible to moderate beneficial effects from the preservation of 7 archeological sites	Negligible to moderate beneficial effects from the preservation of 8 archeological sites	Negligible to moderate beneficial effects from the preservation of 9 archeological sites
<b>Historic Structures</b>	Moderate adverse impacts to Adamsville Site from not preserving the land	Same as Alternative 1	Same as Alternative 1	Moderate beneficial effect from preserving portions of Adamsville Site.
<b>Ethnographic Resources</b>	Minor beneficial effect from the preservation of 2 ethnographic resources	Moderate beneficial effect from the preservation of 7 ethnographic resources	Moderate beneficial effect from the preservation of 8 ethnographic resources	Moderate beneficial effect from the preservation of 9 ethnographic resources
<b>Prime and Unique Farmlands</b>	Negligible impacts because no prime and unique farmlands in project area	Minor to moderate adverse effects from the removal of 80-acres of prime farmland	Same as Alternative 2	Same as Alternative 2
<b>Visual Resources</b>	Negligible to minor beneficial effects from preserving 2 properties from development	Minor to moderate beneficial effects from preserving 3 properties from development	Moderate beneficial effects from preserving 4 properties from development	Moderate beneficial effects from preserving 5 properties from development
<b>Visitor Use and Experience</b>	Negligible to minor beneficial effects from enhanced understanding of cultural resources and viewshed preservation	Minor beneficial effects from enhanced interpretive opportunities, better cultural resource understanding, and viewshed protection	Minor to moderate beneficial effects from enhanced interpretive opportunities, better cultural resource understanding, and viewshed protection	Moderate beneficial effects from enhanced interpretive opportunities, better cultural resource understanding, and viewshed protection
<b>Park Operations</b>	Negligible to minor adverse impact from increased duties	Negligible to minor adverse impact from increased duties	Moderate adverse effect from the need for 7 new employees and \$580,000 to manage the acquired lands	Same as Alternative 3

## Identification of the Environmentally Preferred Alternative

The environmentally preferred alternative is determined by applying the criteria suggested in the National Environmental Policy Act of 1969 (NEPA), which guides the Council on Environmental Quality (CEQ). The environmentally preferred alternative for this project is Alternative 4, as discussed below. The CEQ provides direction that “[t]he environmentally preferable alternative is the alternative that will promote the national environmental policy as expressed in NEPA’s Section 101:

- fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- assure for all generations safe, healthful, productive, and esthetically and culturally pleasing surroundings;
- attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment that supports diversity and variety of individual choice;
- achieve a balance between population and resource use that will permit high standards of living and a wide sharing of life’s amenities; and
- enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

In comparison to the other alternatives, Alternative 1, the No Action Alternative, only minimally meets the above six evaluation factors. Although Alternative 1 requires the least amount ground disturbance from fencing, signage, and noxious/exotic weed control and the least amount of time, energy, and funding for managing and purchasing the land, this alternative preserves the least amount of land of any of the alternatives. By only preserving 8.16 acres, the remaining 249.52 acres of land considered in this study are subject to potential development, thereby Alternative 1 does not best meet the above criteria because it will not protect many of the important cultural resources in the area for future generations.

In comparison to Alternative 1, Alternative 2, Contiguous Properties Only, better addresses the six evaluation factors because it will preserve 43.52 acres of land, thereby protecting more important cultural resources and the Monument’s viewshed. Although Alternative 2 requires more ground disturbance from fencing, signage, and noxious/exotic weed control and more time, energy, and funding for managing and purchasing the lands, it better meets the six criteria because it preserves a greater amount of cultural resources and sensitive viewsheds than Alternative 1.

Alternative 3, Contiguous Properties and Grewe Site, addresses the six criteria better than Alternatives 1 or 2 because it preserves approximately 88.16 acres of land, which will protect a greater number of significant cultural resources. Although the Grewe Site is not directly adjacent to the Monument, it is within the viewshed of the Monument, and Alternative 3 will further better preserve the Monument’s viewshed. Because Alternative 3 involves acquiring a greater amount of land than Alternatives 1 or 2, it will result in a greater amount of ground disturbance; however, it will protect a greater number of significant cultural resources that might otherwise be lost by development and not enjoyed by future generations.

Alternative 4, Contiguous Properties, Grewe Site, and Adamsville Site, is the environmentally preferred alternative for this project because it best addresses the six evaluation criteria. Alternative 4 will preserve the greatest acreage of land (approximately 257.68 acres) which will protect the greatest number of cultural resources, particularly archeological sites. This alternative will also require the greatest amount of ground disturbance and the greatest expenditure of time and money for managing and purchasing the



properties, but it will enable Casa Grande Ruins National Monument to protect significant cultural resources for future generations and preserve sensitive viewsheds.

## **Identification of the Preferred Alternative**

No new information came forward from public scoping or consultation with other agencies to necessitate the development of any new alternatives, other than those described and evaluated in this document. Considering the four alternatives carried forward in this document, Alternative 4, Contiguous Properties, Grewe Site, and Adamsville Site, is recommended as the National Park Service Preferred Alternative because it preserves the greatest acreage of land and greatest number of significant cultural resources that are thematically tied to the Monument. In addition, Alternative 4 best meets the Purpose and Need for the project as well as the project objectives. For the remainder of the document, Alternative 4 will be referred to as the Preferred Alternative.

# AFFECTED ENVIRONMENT

## Introduction

This Chapter describes the existing setting or baseline conditions (i.e. affected environment) within the project area. This information will be used to analyze impacts against the current conditions of the project area. Resource topics included in this chapter, and analyzed in terms of impacts in the following chapter *Environmental Consequences*, are Archeological Resources, Historic Sites, Ethnographic Resources, Prime and Unique Farmlands, Visual Resources, Visitor Use and Experience, and Park Operations. Some general information and regulations pertaining to these resources is also included in the first chapter of the document in the section *Impact Topics Carried Forward for Further Analysis*. To facilitate the following discussion, some resources have been described according to location under the headings: Properties Adjacent to the Monument, the Grewe Community, and the Adamsville Site.

## Archeological Resources

### Properties Adjacent to the Monument

There are several identified archeological sites located on land adjacent to the Monument being considered in this study for transfer and/or acquisition (Zedano 1995). This includes property owned by a private individual, a non-profit organization, the Bureau of Indian Affairs, and the Bureau of Land Management. Archeological sites that will be further discussed in this section include AZ U:14:108, AZ U:14:109, AZ U:14:114, AZ AA:2:1, AA:2:15, AZ AA:2:26, and AZ AA:2:27 Arizona State Museum (ASM).

Recent surveys have concluded that the Casa Grande Ruins is a part of a much larger site that archeologists now refer to as the Casa Grande Grewe Community. Sites in the vicinity of Casa Grande National Monument are most likely associated with this prehistoric community which once flourished along the Casa Grande canal system, most of which date from AD 1200 to AD 1450. It is important to note that the parcels of land under consideration contain the known sites described below, but may also contain significant subsurface archeological resources that have yet to be discovered.

Archeological sites discussed below have had no formal determination of eligibility for inclusion in the National Register of Historic Places except for AZ AA:2:2, the Grewe Community, and AZ U:15:1, the Adamsville site which are both listed; however, all of these sites are significant to the interpretation of the Monument. A formal determination of eligibility for these sites will be conducted in consultation with the Arizona State Historic Preservation Office. The following descriptions only give a brief introduction to the sites and their significance, and are not meant to describe all of the features, dimensions, locations, or specific information pertaining to these sites so as to protect sensitive archeological information.

- AZ U:14:108 (ASM) is partially located on property currently owned by a private individual just west of the Monument. This archeological site consists of a Hohokam canal and settlement. This acquisition would include the purchase of 80 acres on which is located a portion of the site. This property is currently being considered for sale by the current owner, and is currently threatened by encroachment from commercial and residential development.
- AZ U:14:109 (ASM), commonly referred to as the Horvath Site, is currently managed by the Bureau of Indian Affairs and is located northeast of the Monument. The archeological site consists of ethnographic resources significant to affiliated Native American Tribes, and is a component of the larger Grewe Community described above.

- AZ U:14:114 (ASM), is a part of the larger Grewe Community. Archeological resources found at this site are consistent with those found at other Grewe Community related sites. This archeological site is partially located on 13 acres of property currently managed by the Archeological Conservancy. The site is threatened by encroachment from further commercial development and is adjacent to State Highway 287.
- AZ AA:2:1 (ASM) is partially located on 13 acres of property currently managed by the Archeological Conservancy. This site is a part of the Grewe Community and most likely consists of prehistoric pithouses and roasting pits. This site is currently threatened by encroachment from further commercial development. It has already been impacted by the construction of businesses adjacent to the property.
- AZ AA:2:15 is partially located on land currently administered by the Bureau of Land Management and the National Park Service. The site primarily consists of trash mounds. It is a part of the larger Casa Grande Grewe Community, and is located in the southwest corner of the Monument. Approximately 4.5 acres would be transferred to the National Park Service from the Bureau of Land Management.
- AZ AA:2:26 and 27 (ASM) are partially located on the west side of the Monument and most likely extend into the 80 acre parcel that is privately owned. Each of these sites consists of trash mounds that are associated with the larger Casa Grande Grewe Community.

#### The Grewe Community

Those archeological sites not directly adjacent to the Monument that are a part of the Casa Grande Grewe Community will be discussed in this section. This includes AZ AA:2:2 (ASM), commonly referred to as the Grewe Site. It is located within the vicinity of the Monument just to the east. The property being considered in this section for purchase is 30.52 acres and is currently managed by the Archeological Conservancy, a non-profit organization. Recent surveys have concluded that the Casa Grande Ruins is a part of a much larger site that archeologists now refer to as the Casa Grande Grewe Community. Sites in the vicinity of the Monument are most likely associated with this prehistoric community which once flourished along the Casa Grande canal system. Most of these sites date from AD 1200 to AD 1450. This site consists of pithouses, roasting pits, mounds and perhaps the largest ball court in Arizona. The sites are currently threatened by encroachment from commercial development. This site is listed in the National Register of Historic Places.

#### Adamsville Site

AZ U:15:1 (ASM), commonly referred to as Adamsville after the 19<sup>th</sup> century town located ½ mile north of the site is approximately 4 miles east of the Monument on State Highway 287, the major thruway between the cities of Florence and Coolidge. State Highway 287 bisects the site. It was listed in the National Register of Historic Places on August 28, 1970. In 1991, the site was fenced by the State of Arizona and posted as State Trust Land. The current size of the site is 155 acres of which 126 acres are proposed for addition to the Monument. Adamsville is a large Classic Hohokam habitation site consisting of a platform, mound, at least one compound, a ballcourt, and 41 associated mounds of which some still have standing architecture. It dates from AD 1100 to AD 1450. The site is bounded by residual homes to the north, a large commercial land fill to the northeast, and farmland to the south and east. The site is currently threatened by encroachment from commercial development and the State of Arizona is not able to provide adequate protection.

## Historic Structures

The only historic structures situated on the parcels under consideration are prehistoric features located at the Adamsville site AZ U:15:1 (ASM). A site description of the Adamsville site has already been discussed in a previous section. In the spring of 2002, the Western Archeological and Conservation Center conducted a protection study site assessment for the Monument. Adamsville was one of the many sites assessed. During the assessment, archeologists determined that most of the site has received no previous examination and that no comprehensive study has been done to determine the types and number of features found at the site. Above surface features noted in previous work that have some architecture include the ballcourt, a platform mound, a compound and some of the 41 associated mounds, and trash mounds. No in-depth study has occurred with regard to any of the above ground surface architecture remaining. Two systematic excavation projects were conducted at the site, one by Frank Pinckley, custodian of Monument in 1919 and the other by Harold Gladwin, a research fellow from the Southwest Museum in 1927. Architecture is currently being impacted by natural processes since it was left exposed by previous excavations. The site is threatened by encroachment from commercial and residential development.

## Ethnographic Resources

An ethnographic study had not been conducted at the Monument at the time of this document preparation. All of the sites discussed in the *Archeology* section most likely contain ethnographic resources. All of these resources are of great importance to Native American Tribes affiliated with the Monument. This was determined during consultation with Native American Tribes in meetings held by the Bureau of Indian Affairs and Casa Grande Ruins National Monument on October 14, 1998. This was also reiterated in later public meetings where Native American Tribes were present for discussion concerning plans for a heritage area. These meetings began in February 2001 and several have been held since that time.

Given the cultural resources already identified in previous work at the sites, it can be inferred that there are significant ethnographic resources located at each of the sites. AZ U:14:109, the Horvath Site, is also associated with the Casa Grande Grewe Community. Affiliated Native American Tribes have identified this site as being of great importance to them. It is currently managed by the Bureau of Indian Affairs and has been identified as a property that could be transferred to the Monument.

## Prime and Unique Farmland

Arizona farmland is determined to be either prime or unique due to arid conditions requiring expensive irrigation systems. The 80-acre parcel of land located along the western boundary of the Monument is currently used as agricultural land. The soils in this site are listed as Coolidge sandy loam which, if irrigated, is considered prime farmland (NRCS 2003). No other prime or unique farmland exists on the properties being considered for this project.

Consultation with the Natural Resources Conservation Service was conducted in June 2003. During this consultation, a Farmland Conversion Impact Rating Form was completed by the Natural Resources Conservation Service to determine the significance of the 80-acre farm property. According to this form, a score of 160 points or above typically indicates that a parcel of farmland should receive more consideration for protection from the federal agency sponsoring the action. The Natural Resources Conservation Service gave the 80-acres of private land to the west of the Monument a score of 168 points, indicating that alternative sites should be considered to minimize impact to prime farmland.

## Visual Resources

The parcels of land that the Monument proposes to acquire are non-contiguous undeveloped parcels. Following are description of these parcels in terms of visual resources.

### Properties Adjacent to the Monument

For the purpose of this study, there are four parcels of land that are located adjacent to the Monument. These properties include the 3.75 acre National Park Service property located at the southern end of the Monument; the 4.5 acre Bureau of Land Management parcel located on the southwest corner of the Monument; the 7.41 acre Bureau of Indian Affairs land situated to the northeast of the Monument; and the 80 acre, privately owned parcel located along the western boundary of the Monument. The 3.75 acre National Park Service parcel and 4.5 acre Bureau of Land Management parcel are currently undeveloped native desert, but portions of these lands have been previously disturbed. The 7.41 acre Bureau of Indian Affairs land is also undeveloped and was previously used for agriculture. The 80 acre parcel of private land is currently being irrigated and used for agriculture. The viewshed around these parcels of land includes the Pima Lateral Canal, paved and unpaved roads, farm fields, and residential areas.

The existing lightscape in these areas includes lighting from the Wal-Mart store and neighboring buildings and residences in the City of Coolidge. With continual development in the general area, the night sky is becoming increasingly illuminated with lighting from commercial and residential developments.

### The Grewe Community

There are three parcels of land that comprise the Grewe Community including a 28.5 acre site, a 13 acre site, and a 2 acre site. The 28.5 acre and 13 acre parcels are located adjacent to the Wal-Mart Store, while the 2 parcel is located north of Wal-Mart on the north side of State Highway 287. All three of these parcels are undeveloped lands which were previously used for agriculture. The viewshed around the proposed parcels is disturbed and includes the Wal-Mart store, the Southern Pacific Railroad, State Highways 287 and 87, the San Carlos Irrigation Project building, and farm fields. The existing lightscape in this area includes lighting from the Wal-Mart store, the San Carlos Irrigation Project building, and residences in the City of Coolidge.

### Adamsville Site

The 126 acre portion of the Adamsville Site considered for this proposal is located approximately 4 miles east of the Monument. This parcel of land is undeveloped native desert land with above-ground cultural features. The viewshed around this parcel includes State Highway 287, residential homes, farm fields, and a landfill. This site is located between the Cities of Coolidge and Florence, and State Highway 287 is a major arterial road from the Phoenix area. A large number of vehicles use this road to travel to Florence, which is the County seat and houses five prisons. The existing lightscape in this area includes lighting from residential houses.

## Visitor Use and Experience

Total recreation visits to Casa Grande Ruins National Monument for 2002 numbered 85,231. The Monument is open year round, except for Christmas. The average length of stay for visitors is less than two hours. Visitors to the Monument may walk around or take a guided tour of the attractions including the visitor center/museum, the Casa Grande and "compound A", the prehistoric ballcourt, and the picnic area.

Currently, visitors are exposed to a very brief period of time during which the Hohokam culture existed. Visitors do not have the opportunity to learn about the earlier time periods of the Hohokam. Some of the lands considered in this proposal contain some of the earliest settlements of the Hohokam culture. Following is a description of the reasons why these lands are considered significant, which can assist

decision-makers in determining possible interpretive and research opportunities to benefit visitor use and experience.

### Properties Adjacent to the Monument

The 3.75 acre, 4.5 acre, and 7.14 acre parcels of land located on the southern end, southwest corner, and northeast corner of the Monument, respectively, are currently native desert land. The 3.75 acre National Park Service land does not contain significant cultural resources. The 4.5 acre parcel was originally part of the Monument, but was withdrawn for the purpose of constructing the Pima Lateral Canal. The 7.14 acre parcel contains significant cultural resources, including a prehistoric cemetery. The 80 acre parcel of land on the western boundary of the Monument is currently agricultural land, and contains a significant portion of the prehistoric Canal Casa Grande. The Monument does not currently have any prehistoric canals within its boundaries.

### The Grewe Community

The three parcels of land located in the Grewe Community are all currently undeveloped and former agricultural lands. These parcels of land contain some prehistoric cultural features that have been excavated and backfilled with soil for protection. These features are extremely significant to the Casa Grande and Hohokam culture, and represent an early time period which does not exist on the Monument.

### Adamsville Site

The 126 acre portion of the Adamsville Site is located approximately 4 miles east of the Monument, and is currently undeveloped native desert land with above ground cultural features. This site has both prehistoric and historic cultural resources, and is listed in the National Register of Historic Sites.

## **Park Operations**

Presently, Casa Grande Ruins National Monument encompasses 472.5 acres that includes the Casa Grande (or Great House) and approximately 60 other archeological sites within its boundary. In 1983, the Monument was annexed into the City of Coolidge, providing the monument with city services including fire and police protection, refuse removal, water, and sewage. The annexation has allowed the Monument to concentrate its limited resources to interpretation, preservation, and customer service.

The monument employs twelve permanent and two seasonal employees to operate a seven-day interpretive program every day except December 25<sup>th</sup> (Christmas), and to provide a minimum of four scheduled interpretive tours per day between the months of November and April. These twelve permanent employees and two seasonal employees total thirteen full-time equivalency employees. These positions are Superintendent (GS-025-13), Administrative Officer (GS-0341-09), Administrative Support (GS-303-06), Chief Ranger (GS-025-11), three Park Rangers (GS-025-09), Visitor Use Assistant (GS-303-05), Facility Manager (GS-1640-09), Exhibit Specialist (GS-1010-09), Maintenance Worker (WG-4749-08), Maintenance Worker (WG-4749-03), Maintenance Worker(s) (WG-3502-03), Visitor Use Assistant(s) (GS-303-04). Management and Administration support all activities as required by Director's Orders 2, 6, 9, 12, 18, 22, 28, 32, 43, 44, 53, 62, 77, and NPS Management Policies 2001.

In addition to interpretation, the monument maintains thirteen historic buildings identified on the List of Classified Structures, five major prehistoric compounds including Compound A, the Casa Grande (Great House), and approximately 60 other archeological sites. Maintenance staff performs routine and cyclic preservation to the Casa Grande and the other structures listed on the List of Classified Structures. Maintenance staff also perform routine and cyclic duties to ensure the facilities and grounds meet visitor safety and health standards and staff operate in a safe and healthy environment. The maintenance division maintains the public use areas, natural and cultural grounds, three miles of developed and undeveloped roads, approximately four miles of boundary fence, parking lot, signs, and associated equipment in support of their responsibilities.

The monument's FY 2003 Operational Budget was \$656,000 which funds the operation of the visitor center/museum seven days per week, 52 weeks per year. Between the months of November and April a minimum of four ranger guided tours and a permanently staffed entrance desk are offered to an average of 140,000 visitors. Currently, the Operating Budget / Operation of the National Park Service funding is broken out as:

Personnel Services:	569,517
Fixed Costs: (utilities, vehicles, rent)	55,370
Supplies and Materials:	19,513
Assessments:	<u>11,600</u>
	\$656,000

# ENVIRONMENTAL CONSEQUENCES

## Introduction and Methodology

This chapter analyzes the potential environmental consequences, or impacts, that will occur as a result of implementing the proposed project. Topics analyzed in this chapter include Archeological Resources, Historic Structures, Ethnographic Resources, Prime and Unique Farmlands, Visual Resources, Visitor Use and Experience, and Park Operations. Direct, indirect, and cumulative effects, as well as impairment are analyzed for each resource topic carried forward. Because this document serves as a combined Environmental Assessment/Assessment of Effect, a separate methodology for cultural resources is included in this introduction.

Potential impacts are described in terms of type, context, duration, and intensity. General definitions are defined as follows, while more specific impact thresholds are given for each resource at the beginning of each resource section.

- **Type** describes the classification of the impact as either beneficial or adverse, direct or indirect:
  - Beneficial: A positive change in the condition or appearance of the resource or a change that moves the resource toward a desired condition.
  - Adverse: A change that moves the resource away from a desired condition or detracts from its appearance or condition.
  - Direct: An effect that is caused by an action and occurs in the same time and place.
  - Indirect: An effect that is caused by an action but is later in time or farther removed in distance, but is still reasonably foreseeable.
- **Context** describes the area or location in which the impact will occur. Are the effects site-specific, local, regional, or even broader?
- **Duration** describes the length of time an effect will occur, either short-term or long-term:
  - Short-term impacts generally last only during construction, and the resources resume their pre-construction conditions following construction.
  - Long-term impacts last beyond the construction period, and the resources may not resume their pre-construction conditions for a longer period of time following construction.
- **Intensity** describes the degree, level, or strength of an impact. For this analysis, intensity has been categorized into negligible, minor, moderate, and major. Because definitions of intensity vary by resource topic, intensity definitions are provided separately for each impact topic analyzed in this Environmental Assessment/Assessment of Effect.

**Cumulative Effects:** The Council on Environmental Quality (CEQ) regulations, which implement the National Environmental Policy Act of 1969 (42 USC 4321 et seq.), require assessment of cumulative impacts in the decision-making process for federal projects. Cumulative impacts are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions" (40 CFR 1508.7). Cumulative impacts are considered for both the No Action and Preferred Alternatives.



Cumulative impacts were determined by combining the impacts of the Preferred Alternative with other past, present, and reasonably foreseeable future actions. Therefore, it was necessary to identify other ongoing or reasonably foreseeable future projects at Casa Grande Ruins National Monument and, if applicable, the surrounding region. The geographic scope for this analysis includes elements within the surrounding archeological setting that are thematically relevant to this proposal, while the temporal scope includes projects within a range of approximately 10 years, past and present. Given this, the following projects were identified for the purpose of conducting the cumulative effects analysis:

- **Museum Improvements at Casa Grande Ruins National Monument** – In 1995, the museum at the Casa Grande Ruins National Monument visitor center was remodeled, and the museum exhibits were updated.
- **Trail Construction at Casa Grande Ruins National Monument** – A nature trail from the Monument's front gate to the visitor center has been proposed for construction within the next few years.
- **Viewing Stand Construction at Casa Grande Ruins National Monument** – A handicapped accessible viewing stand for the prehistoric ballcourt has been proposed for construction within the next few years.
- **Development of General Management Plan for Casa Grande Ruins National Monument** – Within the next few years, Casa Grande Ruins National Monument will undertake the task of preparing a General Management Plan for the Monument. The General Management Plan is an overall plan to help park managers guide programs and set priorities for resource stewardship, visitor understanding, appreciation, and enjoyment; partnerships; facilities development; and operations over the next 15 to 20 years.
- **Residential and Commercial Development** – Continual development in the areas surrounding Casa Grande Ruins National Monument has resulted in buildings and structures that are visible from National Monument. Within the past few years, a Wal-Mart and Blockbuster Video were constructed across the street from the Monument, and the nearby Safeway underwent substantial improvements. Other fast-food restaurants such as Wendy's and Kentucky Fried Chicken/Taco Bell may be constructed within the viewshed (across the street) of the Monument in the near future. A proposal to construct a prison in the area was initiated, along with other future residential and commercial developments.
- **Development of Heritage Area** – The community surrounding Casa Grande Ruins National Monument has expressed interest in developing a National Heritage Area to protect significant cultural resources that may otherwise be lost. This is an ongoing grassroots effort which may result in the establishment of an official National Heritage Area sometime in the future.
- **Roadway Improvements** – The Arizona Department of Transportation together with the City of Coolidge propose to conduct roadway improvements to Arizona Boulevard/State Route 87 beginning in 2004. These improvements include the addition of sidewalks and landscaping to the eastern side of the highway opposite the Monument's entrance in front of Wal-Mart, Blockbuster Video, and Safeway.
- **Widening of the Pima Lateral Canal** – This is a Bureau of Indian Affairs project that will widen and pave the Pima Lateral Canal. The initial stage of the project is should begin in 2004, and the project will last for several years.
- **Construction of Two Schools in Coolidge School District** – Two schools are currently under construction. One is situated in the city of Coolidge, and the other is in a new residential community approximately 15 miles northeast of Coolidge called Johnson Ranch.

- **Construction of New Police Department** – The new city police department is planned for 2004 construction, and it will be situated on the south end of Arizona Boulevard in Coolidge.
- **Landfill Closure** – The landfill located near the Adamsville Site will be closed in 2004, and the new transfer station at Johnson Ranch will be used instead.

**Impairment:** National Park Service's Management Policies, 2001 require analysis of potential effects to determine whether or not actions would impair park resources (NPS 2000b). The fundamental purpose of the national park system, established by the Organic Act and reaffirmed by the General Authorities Act, as amended, begins with a mandate to conserve park resources and values. National Park Service managers must always seek ways to avoid, or to minimize to the greatest degree practicable, adversely impacting park resources and values. However, the laws do give the National Park Service the management discretion to allow impacts to park resources and values when necessary and appropriate to fulfill the purposes of a park, as long as the impact does not constitute impairment of the affected resources and values.

Although Congress has given the National Park Service the management discretion to allow certain impacts within parks, that discretion is limited by the statutory requirement that the National Park Service must leave park resources and values unimpaired, unless a particular law directly and specifically provides otherwise. The prohibited impairment is an impact that, in the professional judgment of the responsible National Park Service manager, would harm the integrity of park resources or values. An impact to any park resource or value may constitute an impairment, but an impact would be more likely to constitute an impairment to the extent that it has a major or severe adverse effect upon a resource or value whose conservation is:

1. necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park;
2. key to the natural or cultural integrity of the park; or
3. identified as a goal in the park's general management plan or other relevant National Park Service planning documents.

Impairment may result from National Park Service activities in managing the park, visitor activities, or activities undertaken by concessionaires, contractors, and others operating in the park. A determination on impairment is made in the Conclusion section for each of the resource topics carried forward in this chapter.

**Impacts to Cultural Resources and Section 106 of the National Historic Preservation Act:** In this Environmental Assessment/Assessment of Effect, impacts to historic properties are described in terms of type, context, duration, and intensity, as described above, which is consistent with the regulations of the Council on Environmental Quality (CEQ) that implement the National Environmental Policy Act (NEPA). This Environmental Assessment/ Assessment of Effect is intended, however, to comply with the requirements of both NEPA and §106 of the National Historic Preservation Act (NHPA). To achieve this, a §106 summary is included under the Preferred Alternative for each of the cultural topics carried forward including archeological resources, historic structures, and ethnographic resources. The topics of cultural landscapes and museum collections were dismissed from further consideration in *Impacts Dismissed from Further Consideration* because none were identified in the project area. The §106 Summary is intended to meet the requirements of §106 and is an assessment of the effect of the undertaking (implementation of the alternative) on cultural resources, based upon the criterion of effect and criteria of adverse effect found in the Advisory Council's regulations.

Under the Advisory Council's regulations, a determination of either *adverse effect* or *no adverse effect* must be made for affected historic properties that are eligible for or listed in the National Register of Historic Places. An *adverse effect* occurs whenever an impact alters, directly or indirectly, any characteristic of a cultural resource that qualify it for inclusion in the National Register (e.g. diminishing

the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association). *Adverse effects* also include reasonably foreseeable effects caused by the Preferred Alternative that would occur later in time; be farther removed in distance; or be cumulative (36 CFR Part 800.5, Assessment of Adverse Effects). A determination of *no adverse effect* means there is an effect, but the effect would not diminish in any way the characteristics of the cultural resource that qualify it for inclusion in the National Register of Historic Places

In accordance with the Advisory Council on Historic Preservation's regulations implementing §106 of the NHPA (36 CFR Part 800, Protection of Historic Properties), impacts to historic properties for this project were identified and evaluated by (1) determining the area of potential effects; (2) identifying cultural resources present in the area of potential effects that were either listed in or eligible to be listed in the National Register of Historic Places; (3) applying the criteria of adverse effect to affected cultural resources either listed in or eligible to be listed in the National Register; and (4) considering ways to avoid, minimize, or mitigate adverse effects.

CEQ regulations and the National Park Service's *Conservation Planning, Environmental Impact Analysis and Decision-Making* (Director's Order #12) also call for a discussion of the appropriateness of mitigation, as well as an analysis of how effective the mitigation would be in reducing the intensity of a potential impact (e.g. reducing the intensity of an impact from major to moderate or minor). Any resultant reduction in intensity of impact due to mitigation, however, is an estimate of the effectiveness of mitigation under NEPA only. It does not suggest that the level of effect as defined by §106 is similarly reduced. Although adverse effects under §106 may be mitigated, the effect remains adverse.

In order for a historic property to be listed in the National Register of Historic Places, it must meet one or more of the following criteria of significance: A) associated with events that have made a significant contribution to the broad patterns of our history; B) associated with the lives of persons significant in our past; C) embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic value, or represent a significant and distinguishable entity whose components may lack individual distinction; D) have yielded, or may be likely to yield, information important in prehistory or history. In addition, the historic property must possess integrity of location, design, setting, materials, workmanship, feeling, association (*National Register Bulletin, How to Apply the National Register Criteria for Evaluation*).

## Archeological Resources

Numerous archeological sites are located on property being considered for transfer to or acquisition by the Monument. Each of these sites has similar integrity and states of condition. It should be noted that all of these are surface sites that are not protected by any natural or man-made enclosure or shelter. Some of the sites are currently protected by fencing while others are open and unprotected. One property in particular is under the greatest threat of being sold and/or developed. This includes the privately owned 80 acre parcel. There will be no major construction projects associated with this study. So, direct physical impacts to archeological sites will be negligible. The only direct physical impact to the properties will be the addition of fencing to better protect the properties and to identify each as being managed and protected by the National Park Service. There will be minor to moderate beneficial effects to each of the properties since each will be fenced and further protected under the mission and staff of the National Park Service.

### Intensity Level Definitions

**Negligible:** Impact is at the lowest levels of detection - barely measurable with no perceptible consequences, either adverse or beneficial. For purposes of Section 106, the determination of effect would be *no historic properties affected*.

**Minor:** Adverse: Disturbance of a site(s) results in little, if any, loss of integrity. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Beneficial: Maintenance and preservation of a site(s). For purposes of Section 106, the determination of effect would be *no adverse effect*.

**Moderate:** Adverse: Disturbance of a site(s) results in loss of integrity. For purposes of Section 106, the determination of effect would be *adverse effect*. A memorandum of agreement is executed among the National Park Service and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). The mitigative measures identified in the MOA reduce the intensity of impact under NEPA from major to moderate.

Beneficial: Stabilization of a site(s). For purposes of Section 106, the determination of effect would be *no adverse effect*.

**Major:** Adverse: Disturbance of a site(s) results in loss of integrity. For purposes of Section 106, the determination of effect would be *adverse effect*. The National Park Service and applicable state or tribal historic preservation officer are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).

Beneficial: Active intervention to preserve a site(s). For purposes of Section 106, the determination of effect would be *no adverse effect*.

## Impacts of Alternative 1 – No Action (Federal Land Transfers)

Archeological sites in this alternative potentially impacted by this proposed action include AZ U:14:109 and AZ AA:2:15 (ASM). These sites, regardless of what decisions are made regarding the acquisition of property, would eventually come under the management of the Monument since the property on which each site is located would be transferred by the Bureau of Indian Affairs and Bureau of Land Management. Both AZ U:14:109 and AZ AA:2:15 are in need of some fencing to further protect the properties from looting and/or off-road vehicular traffic so there would be minimal ground disturbance resulting in negligible impacts to the archeological resources. The fencing would also provide a minor beneficial effect since the properties would be better protected against vehicular traffic and looting. There would also be a minor beneficial effect since the archeological resources through the land transfers would be brought under the management and protection of the mission and staff of the National Park Service.

Cumulative Effects: Given that these two archeological sites will be brought under the long-term protection of the staff and mission of the National Park Service, the condition of the sites should improve in time. Integrity of archeological resources in each of the sites will be maintained into the future, thus protecting a greater quantity of cultural resources from potential development. Future scientific research and interpretation will benefit over time given that these sites will be better protected and site integrity maintained. The cumulative result would be that the transfer of properties to the Monument would result in a moderate beneficial effect to archeological resources in the area.

Conclusion: Alternative 1, the No Action Alternative, will result in negligible to minor beneficial impacts to the two archeological resources located on the properties to be acquired. Ground disturbance from constructing the fencing will result in negligible impacts because construction will not be conducted within archeological sites. There would be minor beneficial effects with regard to the management and protection of the two archeological sites. There would also be improved scientific research and interpretation since the integrity of the archeological resources would be maintained. Alternative 1 will not impair archeological resources.

## Impacts of Alternative 2 – Federal Land Transfers and Contiguous Property

Under this alternative, and in addition to the properties transferred to the park under the No Action Alternative, archeological sites AZ U:14:108, AZ AA U:14:114, AZ AA:2:1, AZ AA:2:26, and AZ AA:2:27 (ASM) would be brought under the management and protection of the Monument through land

acquisition. There would be only negligible impacts to archeological resources. Fencing required to enclose these properties would cause minimal ground disturbance and would have negligible effects to archeological resources. In most instances, fencing can be placed so that it does not impact archeological resources identified in previous surveys and site assessments. Fencing would result in minor beneficial effects to each of the archeological sites given that the sites would be better protected from looting and/or commercial and residential development. There would also be a moderate beneficial effect since the properties, especially the one privately owned, would be managed and protected under the mission and staff of the National Park Service. This would include regular patrols, monitoring of archeological resources, and adherence to management policies designed to maintain or enhance the condition of archeological resources.

Cumulative Effects: The integrity and condition of a greater number of archeological resources would be maintained in perpetuity. Long-term protection against looting or further commercial or residential development would be ensured. Given that the Monument is considering interpreting archeological resources beyond the Monument in cooperation with the City of Coolidge and Florence, these archeological resources would be of great importance in providing a holistic view of the Casa Grande Grewe Community. The cumulative result would be that the acquisition of these properties would overall result in a minor beneficial effect to archeological resources in the area.

Conclusion: Seven archeological resources related to the Casa Grande Grewe Community in the vicinity of the Monument would be acquired under this alternative resulting in negligible to moderate beneficial effects. Negligible to minor beneficial effects would result from the fencing which will provide greater protection of the archeological sites. The acquisition would have a moderate beneficial effect since this alternative would provide for greater protection of archeological resources currently not protected. It would also ensure against further encroachment on archeological resources located in these properties by further commercial or residential development. Alternative 2 will not impair archeological resources.

### **Impacts of Alternative 3 – Federal Land Transfers, Contiguous Property, and Grewe Site**

Under this alternative, and in addition to properties that would be transferred under the No Action Alternative and properties acquired under Alternative 2, the Monument would seek to acquire properties in the vicinity of the Monument that are related to the larger Casa Grande Grewe Community. This includes archeological site AZ AA:2:2 (ASM), also known as the Grewe Site which is partially located on 30.52 acres just to the east of the Monument near present commercial businesses. The proposed acquisition of further properties under this alternative would be a moderate beneficial effect in further protecting significant archeological sites identified as being a part of the Grewe Community. These sites contain significant archeological resources such as well-preserved Hohokam pithouses, roasting pits, trash mounds, and possibly the largest ballcourt discovered in Arizona. Additional fencing would be required to further protect the archeological resources from off-road vehicular traffic, looting, and other ground disturbing activities. Fencing the properties would cause some minor ground disturbance which would result in negligible effects because fencing will not be placed in significant archeological sites. Fencing the properties would provide a minor beneficial effect in that no more off-road vehicular traffic would occur, and the archeological resources would be better protected against looting.

Cumulative Effects: Under this alternative with the addition of properties containing sections of AZ AA:2:2 (ASM), the Grewe Site, a more comprehensive protection of resources related to the Casa Grande Grewe Community would occur. Given the better protection the integrity and condition of the archeological resources would be maintained. The long-term research value of the archeological resources would be enhanced because of this as well. In the future, the Monument would be better equipped to provide a more holistic interpretation of the prehistoric community. The Grewe Site is core to the story of the community. The long-term research value of the archeological resources would be enhanced as well since the archeological resources integrity would be maintained. As Coolidge continues to grow as a community the archeological resources would also be protected in perpetuity against further

encroachment from commercial and residential development. The cumulative result of this alternative would be a moderate beneficial effect.

**Conclusion:** The acquisition of properties containing eight archeological resources related to the Casa Grande Grewe Community in the vicinity of the Monument would result in negligible to moderate beneficial effects. Fencing would result in negligible to minor beneficial impacts from greater protection and minimized ground disturbance. This alternative would bring properties under the protection of the National Park Service that are core to the Grewe Site. The acquisition would have a moderate beneficial effect since this alternative would provide for greater protection of archeological resources currently not protected. It would also ensure against further encroachment on archeological resources located in these properties by further commercial or residential development. Alternative 3 will not impair archeological resources.

### **Impacts of Alternative 4 (Preferred Alternative) – Federal Land Transfers, Contiguous Property, Grewe Site, and Portions of Adamsville**

In addition to properties acquired and transferred to the Monument under the previous alternatives, this alternative would also seek to acquire the State Trust Land on which AZ U:15:1 (ASM), commonly referred to as Adamsville, is situated. This would include the acquisition of 126 acres from the State of Arizona or roughly 80% of the archeological site. AZ U:15:1 was listed in the National Register of Historic Places on August 28, 1970. It is one of the few sites in the region that still has standing architecture. It is also relevant to the history of the Monument since it is located along the prehistoric Casa Grande Canal system which provided water to prehistoric villages and farms throughout the Casa Grande region. The property would require some additional fencing since it is only partially fenced. Currently, areas not fenced are poorly protected and have been impacted by off-road vehicular traffic and looting. The additional fencing would result in negligible impacts and would provide a moderate beneficial effect since it would curb the off-road vehicular traffic and looting. Also, bringing the properties under the mission and protection of National Park Service staff would provide a moderate beneficial effect since the State of Arizona, due to limited resources, is not currently able to adequately protect the archeological site.

**Cumulative Effects:** With the acquisition nine archeological sites including the Adamsville Site, regional archeological resources would be better protected, thus maintaining the integrity and condition of these archeological resources. It would also give the Monument the opportunity to interpret a greater area resulting in an interpretation that fully develops the prehistoric lifeways of the Hohokam that inhabited the area adjacent to and near the Casa Grande Canal system. Since Adamsville still has standing architecture scientists would have a greater understanding of Hohokam architecture and examples to interpret to the public. Eventually, given the emphasis placed on tourism by Florence and Coolidge the property could be interpreted as a part of the greater local history. The cumulative result of this alternative would be a moderate beneficial effect.

**Conclusion:** The acquisition and transfer of properties containing nine archeological resources related to the Casa Grande Grewe would result in moderate beneficial effect. It would bring properties under the protection of the National Park Service that are core to the Grewe Site and provide a greater interpretation of the regional history along the Casa Grande Canal system. The acquisition would have an overwhelmingly beneficial effect since this alternative would provide for greater protection of archeological resources currently not protected, especially the Adamsville site which still exhibits standing Hohokam architecture and is listed in the National Register of Historic Places. It would also ensure against further encroachment on archeological resources located in these properties by further commercial or residential development. Alternative 4 will not impair archeological resources.

**§106 Summary:** After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Part 800.2, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of the Preferred Alternative would result in a determination of *no effected historic properties* for: AZ U:14:109, AZ AA:2:15, AZ U:14:108, AZ AA U:14:114, AZ AA:2:1, AZ AA:2:26, AZ

AA:2:27, AZ AA:2:2 (Grewe Site), and AZ U:15:1 (Adamsville Site) (ASM) which are proposed to be brought under the protection and management of Casa Grande Ruins National Monument.

## Historic Structures

Given the properties being considered for transfer and acquisition by the Monument, there is only one property that still exhibits historic structures that are standing, the Adamsville site, AZ U:15:1 (ASM). Standing architecture at this site includes a compound wall, habitation structures, and the platform mound. The Adamsville site was listed in the National Register of Historic Places on August 28, 1970. It is of great importance to the regional history, professional archeologists, and affiliated Native American Tribes. Currently, the State of Arizona, State Trust Land Office, manages this property on which roughly 80% of the site is located. The 126 acre property is only partially fenced and is bisected by Highway 287 and the Adamsville Road.

## Intensity Level Definitions

In order for a site to be listed in the National Register of Historic Places, it must meet one or more of the four criteria of significance (A, B, C, or D), as described in the introduction to this chapter. The site must also possess integrity of its defining features – buildings, structures, objects -- necessary to convey its significance (*Secretary of the Interior's Standards for the Treatment of Historic Properties*).

**Negligible:** Impact(s) is at the lowest levels of detection – barely measurable with no perceptible consequences, either adverse or beneficial. For purposes of Section 106, the determination of effect would be *no historic properties affected*.

**Minor:** Adverse: Impact would alter a feature(s) of a structure but would not diminish the overall integrity of the resource. For purposes of Section 106, the determination of effect would be *no adverse effect*.

Beneficial: Stabilization/ preservation of features in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. For purposes of Section 106, the determination of effect would be *no adverse effect*.

**Moderate:** Adverse: Impact would alter a feature(s) of the structure, diminishing the overall integrity of the resource. For purposes of Section 106, the determination of effect would be *adverse effect*. A memorandum of agreement (MOA) is executed among the National Park Service and applicable state or tribal historic preservation officer and, if necessary, the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(b). The mitigative measures identified in the MOA reduce the intensity of impact under NEPA from major to moderate.

Beneficial: Rehabilitation of a structure in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. For purposes of Section 106, the determination of effect would be *no adverse effect*.

**Major:** Adverse: Impact would alter a feature(s) of the structure, diminishing the overall integrity of the resource. For purposes of Section 106, the determination of effect would be *adverse effect*. The National Park Service and applicable state or tribal historic preservation officer are unable to negotiate and execute a memorandum of agreement in accordance with 36 CFR 800.6(b).

Beneficial: Restoration of a structure in accordance with the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. For purposes of Section 106, the determination of effect would be *no adverse effect*.

## Impacts of Alternative 1 – No Action (Federal Land Transfers)

The No Action Alternative would not consider AZ U:15:1, the Adamsville site, for acquisition. The result would be that the property would continue to be impacted by off-road vehicular traffic, looting and vandalism. Deciding to take no action would cause moderate adverse impacts to the historic structures since each would continue to be unprotected. This would result in a continuing loss of site integrity and the further degradation of its condition.

Cumulative Effects: Given that the site would not be brought under the protection and management of the National Park Service under this alternative, the site would continue to be impacted over the long-term by off road vehicular traffic, looting, and vandalism. This would result in the continued loss of architecture at the site. The cumulative loss of architecture over time would result in no standing architecture being left for scientists to study. The local communities planning on including Adamsville in a regional history and tourism route would no longer have a site with integrity to interpret and/or exhibit to the public. The cumulative result of this alternative would be a moderate adverse impact.

Conclusion: Alternative 1 would result in moderate adverse impacts to Adamsville. Since the site would continue to be managed under the State of Arizona with no adequate protection beyond partial fencing of the site, Adamsville's historic structures integrity and condition would continue to deteriorate. Alternative 1 will not impair historic structures.

## Impacts of Alternative 2 – Federal Land Transfers and Contiguous Property

This alternative would not consider AZ U:15:1, the Adamsville Site, for acquisition and would have the same impacts as Alternative 1.

Cumulative Effects: Because Alternative 2 does not consider AZ U:15:1, the Adamsville Site, for acquisition, the impacts are the same as Alternative 1.

Conclusion: Alternative 2 has the same impacts as Alternative 1. Alternative 2 will not impair historic structures.

## Impacts of Alternative 3 – Federal Land Transfers, Contiguous Property, and Grewe Site

This alternative would not consider AZ U:15:1, the Adamsville Site, for acquisition and would have the same impacts as Alternative 1.

Cumulative Effects: Because Alternative 3 does not consider AZ U:15:1, the Adamsville Site, for acquisition, the impacts are the same as Alternative 1.

Conclusion: Alternative 3 has the same impacts as Alternative 1. Alternative 3 will not impair historic structures.

## Impacts of Alternative 4 (Preferred Alternative) – Federal Land Transfers, Contiguous Property, Grewe Site, and Portions of Adamsville

Since this alternative includes the purchase of State Trust Land that includes AZ U:15:1, the Adamsville Site, it would have moderate beneficial effects with no conceivable adverse effects. This would include the better protection of the site and its historic structures under the mission and staff of the National Park Service, the property being entirely fenced preventing off-road vehicular traffic impacts, and the deterrence of looting with greater resource protection presence by staff monitoring the property on a more regular basis. Historic structures on this site including the platform mound and trash mounds will not be disturbed by the construction of fences or signs.



**Cumulative Effects:** Given that the property and its historic structures will be better protected and maintained through the acquisition of the State Trust Land, the historic structures integrity and condition will be maintained in perpetuity. Research scientist will benefit as well in the long-term since the historic structures will be better protected. In the future this will allow for a more thorough investigation of Hohokam architecture and the regional history. The cumulative result of this alternative is moderate beneficial effect with no adverse effect.

**Conclusion:** The acquisition and transfer of properties containing historic structures related to the Adamsville site would result in a moderate beneficial effect. It would bring a property under the protection of the National Park Service that is core to a greater regional history along the Casa Grande Canal system. The acquisition would have a moderate beneficial effect since this alternative would provide for greater protection of historic structures not adequately protected that still exhibit standing Hohokam architecture and is listed in the National Register of Historic Places. It would also ensure against further encroachment on historic structures located in this property from further commercial or residential development. Alternative 4 will not impair historic structures.

**§106 Summary:** After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Part 800.2, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of the Preferred Alternative would result in a determination of *no adverse effect* on AZ U:15:1, the Adamsville Site, which is proposed to be brought under the protection and management of the Casa Grande Ruins National Monument.

## Ethnographic Resources

### Intensity Level Definitions

Some places of traditional cultural use may be eligible for inclusion in the National Register of Historic Places as traditional cultural properties (TCPs) because of their association with cultural practices or beliefs of a living community that (a) are rooted in that community's history and (b) are important in maintaining the continuing cultural identity of the community (*National Register Bulletin, Guidelines for Evaluating and Documenting Traditional Cultural Properties*). The methodology for assessing impacts to ethnographic resources is as follows.

- Negligible:** Impact(s) would be barely perceptible and would neither alter resource conditions, such as traditional access or site preservation, nor alter the relationship between the resource and the affiliated group's body of practices and beliefs. For purposes of Section 106, the determination of effect on TCPs would be *no historic properties affected*.
- Minor:** Adverse: Impact(s) would be slight but noticeable but would neither appreciably alter resource conditions, such as traditional access or site preservation, nor alter the relationship between the resource and the affiliated group's body of practices and beliefs. For purposes of Section 106, the determination of effect on TCPs would be *no adverse effect*.
- Beneficial: Would allow access to and/or accommodate a group's traditional practices or beliefs. For purposes of Section 106, the determination of effect on TCPs would be *no adverse effect*.
- Moderate:** Adverse: Impact(s) would be apparent and would alter resource conditions. Something would interfere with traditional access, site preservation, or the relationship between the resource and the affiliated group's practices and beliefs, even though the group's practices and beliefs would survive. For purposes of Section 106, the determination of effect on TCPs would be *adverse effect*.

Beneficial: Would facilitate traditional access and/or accommodate a group's practices or beliefs. For purposes of Section 106, the determination of effect on TCPs would be *no adverse effect*.

**Major:** Adverse: Impact(s) would alter resource conditions. Something would block or greatly affect traditional access, site preservation, or the relationship between the resource and the affiliated group's body of practices and beliefs, to the extent that the survival of a group's practices and/or beliefs would be jeopardized. For purposes of Section 106, the determination of effect on TCPs would be *adverse effect*.

Beneficial: Would encourage traditional access and/or accommodate a group's practices or beliefs. For purposes of Section 106, the determination of effect on TCPs would be *no adverse effect*.

## Impacts of Alternative 1 – No Action (Federal Land Transfers)

The No Action Alternative would propose the transfer of property currently managed by the Bureau of Land Management and Bureau of Indian Affairs to the Monument. On these combined 11.91 acres are located two archeological sites AZ U:14:109, the Horvath site, and AZ AA:2:15 (ASM) that contain ethnographic resources. Other properties being considered in this proposal would not be a part of this alternative. AZ U:14:109, the Horvath site, has been specifically identified as having great importance to affiliated Native American Tribes because it contains significant ethnographic resources associated with the Casa Grande Grewe Community. All of the archeological sites that are a part of this study are either associated with the Casa Grande Grewe Community and/or have significance with regard to maintaining the cultural identity and history of affiliated Native American Tribes. There would be a moderate beneficial effect since the two sites would be protected and maintained under the mission of the National Park Service and its staff.

Cumulative Effects: In this alternative, more ethnographic resources would be protected under the National Park Service mission and by its staff in perpetuity. The level of protection would ensure the integrity and condition of these resources. It would further the cooperation between the affiliated Native American Tribes and the National Park Service in maintaining good working relations. With the enhanced protection of these resources, the cultural identity and history of the affiliated Native American Tribes would be further maintained and preserved. The cumulative result of this alternative is a minor beneficial effect since two archeological sites with ethnographic resources would be protected.

Conclusion: This alternative results in a minor beneficial effect since two archeological sites with ethnographic resources will be under the protection of the National Park Service. However, not all of the sites considered in this proposal will be protected and further deterioration with regard to each site's integrity and condition will continue to occur. Alternative 1 will not impair ethnographic resources.

## Impacts of Alternative 2 – Federal Land Transfers and Contiguous Property

By acquiring property adjacent to the Monument in addition to the land transferred to the Monument under the no action alternative, there will be additional ethnographic resources protected. The acquired properties would include 80 acres privately owned and 13 acres owned by the Archeological Conservancy. The addition of these properties to this alternative includes more archeological sites AZ AA:2:1, AZ AA:2:26, AZ AA:2:27, AZ U:14:108, AZ U:14:114 (ASM) being added to those sites already transferred under the No Action Alternative, for a total of seven archeological sites. These sites are partially located on the properties that would be acquired.

Each site is important for the ethnographic resources that are found in each one. AZ AA:2:1 contains Hohokam pithouses, roasting pits, and other features that are associated with the Casa Grande Grewe Community. AZ U:14:108 contains a remnant of the prehistoric irrigation canal and other associated features that are apart of the same community and the Casa Grand Canal system. AZ AA:2:26 and 27

contain prehistoric trash mounds associated with the monument and AZ U:14:114 contains archeological resources consistent with the larger Grewe Community. By bringing these ethnographic resources under the management and protection of the National Park Service, it would result in a moderate beneficial effect.

Cumulative Effects: In this alternative, more ethnographic resources would be protected under the National Park Service mission and by its staff in perpetuity in addition to those alternatives previously discussed. The level of protection would ensure the integrity and condition of these resources. It would further the cooperation between the affiliated Native American Tribes and the National Park Service in maintaining good working relations. With the enhanced protection of these resources, the cultural identity and history of the affiliated Native American Tribes would be further maintained and preserved. The cumulative result of this alternative is a moderate beneficial effect since seven archeological sites with ethnographic resources would be protected while other ethnographic resources that are a part of this study would not be protected.

Conclusion: This alternative has a moderate beneficial effect since seven archeological sites with ethnographic resources will be under the protection of the National Park Service. Cumulative effects will be beneficial to a moderate degree since more ethnographic resources are protected. Alternative 2 will not impair ethnographic resources.

### **Impacts of Alternative 3 – Federal Land Transfers, Contiguous Property, and Grewe Site**

By acquiring property associated with the Grewe Community in addition to the land acquired adjacent to the Monument and transferred under the No Action Alternative, there will be additional ethnographic resources protected. The acquired properties would include the 30.52 owned by the Archeological Conservancy. The addition of these properties would include archeological site AZ AA:2:2 (ASM) being added to those sites already transferred under the No Action Alternative and those represented in Alternative 2 which addresses properties adjacent to the Monument. This site is partially located on properties that would be acquired.

The site has great significance since it contains a core area of the Grewe site and what is considered to be the largest ballcourt found in Arizona to date. Other significant ethnographic resources found in this site include Hohokam pithouses, roasting pits, trash mounds, and other features that are associated with the Casa Grande Grewe Community. By bringing these ethnographic resources under the management and protection of the National Park Service, in addition to the seven archeological sites mentioned under Alternatives 1 and 2, it would result in a moderate beneficial effect.

Cumulative Effects: In this alternative more ethnographic resources would be protected under the National Park Service mission and by its staff in perpetuity in addition to those alternatives previously discussed. The level of protection would ensure the integrity and condition of these resources. It would further the cooperation between the affiliated Native American Tribes and the National Park Service in maintaining good working relations. With the enhanced protection of these resources, the cultural identity and history of the affiliated Native American Tribes would be further maintained and preserved. The cumulative result of this alternative is a moderate beneficial effect since eight archeological sites with ethnographic resources would be protected while other ethnographic resources that are a part of this study would not be protected.

Conclusion: This alternative has a moderate beneficial effect since eight archeological sites with ethnographic resources will be under the protection of the National Park Service. Alternative 3 will not impair ethnographic resources.

## Impacts of Alternative 4 (Preferred Alternative) – Federal Land Transfers, Contiguous Property, Grewe Site, and Portions of Adamsville

By acquiring portions of the Adamsville Site managed by the State of Arizona, State Trust Land Office, in addition to the previous, there will be additional ethnographic resources protected. The acquired properties would include 126 acres. The addition of this property would include portions of the Adamsville Site AZ U:15:1 (ASM) in addition to those sites already transferred under the previous alternatives. This site is partially located on property that would be acquired.

The site has great significance since it contains a core area of the Adamsville site and standing architecture. Other significant ethnographic resources found in this site include Hohokam platform mound, 41 smaller mounds, a compound, ballcourt, and habitation structures that are associated with the Casa Grande Canal system. By bringing these ethnographic resources under the management and protection of the National Park Service, it would result in a moderate beneficial effect.

This alternative brings in all of the properties that are being studied to expand the boundary of the Monument. It would capture the greatest number and types of ethnographic resources. It would allow for the protection and management of all of these properties through mission of the National Park Service. It would also provide yet another irreplaceable ethnographic resource that preserves and furthers the cultural identity and history of affiliated Native American Tribes.

Cumulative Effects: In this alternative, all ethnographic resources that are being considered in this study would be protected under the National Park Service mission and by its staff in perpetuity in addition to the no action alternative. The level of protection would ensure the integrity and condition of these resources. It would further the cooperation between the affiliated Native American Tribes and the National Park Service in maintaining good working relations. With the enhanced protection of these resources, the cultural identity and history of the affiliated Native American Tribes would be further maintained and preserved. The cumulative result of this alternative is a moderate beneficial effect since many ethnographic resources would be protected.

Conclusion: This alternative has a moderate beneficial effect since all ethnographic resources in this study will be under the protection of the National Park Service. This alternative will provide the greatest protection for the variety of ethnographic resources represented in each of these archeological sites and a moderate beneficial effect in preserving the cultural identity and history of the affiliated Native American Tribes. Alternative 4 will not impair ethnographic resources.

§106 Summary: After applying the Advisory Council on Historic Preservation's criteria of adverse effects (36 CFR Part 800.2, *Assessment of Adverse Effects*), the National Park Service concludes that implementation of the Preferred Alternative would result in a determination of *no effected historic properties* for: AZ U:14:109, AZ AA:2:15, AZ U:14:108, AZ AA U:14:114, AZ AA:2:1, AZ AA:2:26, AZ AA:2:27, AZ AA:2:2 (Grewe Site), and AZ U:15:1 (Adamsville Site) (ASM) which are proposed to be brought under the protection and management of Casa Grande Ruins National Monument.

## Prime and Unique Farmland

Arizona farmland is determined to be either prime or unique due to arid conditions requiring expensive irrigation systems. Consultation with Natural Resource Conservation Service has been conducted to determine the effects of removing prime or unique farmlands from production.

### Intensity Level Definitions

Preservation of prime and unique farmland is important in retaining the ability to farm in the Arizona desert. The rural, historic character of the landscape are key elements in determining prime and unique farmlands. The methodology for assessing impacts to prime and unique farmland has been established based on these key elements, and is defined as follows:

- Negligible:** The impact to prime and unique farmland is at the lowest levels of detection, not perceptible and not measurable.
- Minor:** The impact to prime and unique farmland would be noticeable, but would not alter the function of the farmland or the criteria for which it is considered prime or unique.
- Moderate:** The impact to prime and unique farmland would be more noticeable, and may alter the function of the farmland or the criteria for which it is considered prime or unique.
- Major:** The impact to prime and unique farmland would be readily apparent, and would alter the function of the farmland or the criteria for which it is considered prime or unique.

### Impacts of Alternative 1 – No Action (Federal Land Transfers)

In the No Action Alternative, no additional properties would be purchased by the National Park Service; however, the Bureau of Indian Affairs and Bureau of Land Management properties would still be transferred to the Monument. Neither of these properties are agricultural land, and therefore, the impact to prime and unique farmland will be negligible.

Cumulative Effects: Neither the Bureau of Indian Affairs and Bureau of Land Management properties are used for agriculture, therefore, the cumulative effects to prime and unique farmland would be negligible.

Conclusion: The long-term effects to prime and unique farmland on the Bureau of Indian Affairs and Bureau of Land Management parcels would be negligible, because neither property is used for agricultural production. Alternative 1 will not impair prime or unique farmland resources.

### Impacts of Alternative 2 – Federal Land Transfers and Contiguous Property

Alternative 2 includes the transfer of the Bureau of Indian Affairs and Bureau of Land Management properties to the National Park Service, as well as the acquisition of an 80-acre parcel of land located along the western boundary of the Monument. According to the Natural Resources Conservation Service, the 80-acre parcel is considered prime farmland. If the National Park Service acquires this land, it is likely that it will be taken out of agricultural production, which will have a minor to moderate impact to the prime farmland.

Consultation with the Natural Resources Conservation Service indicated that alternative sites should be considered to minimize the adverse impact to the 80-acre parcel of prime farmland. Alternative 1, the No Action Alternative, does address not impacting the 80-acre parcel of prime farmland by not acquiring it. The remaining three alternatives (Alternatives 2, 3, and 4) include the acquisition of the 80-acre parcel, which would decommission the prime farmland. Although these three alternatives do not avoid the prime farmland, they do include mitigation measures to minimize the adverse impact to prime farmland by preserving the infrastructure (irrigation canals) on the 80-acre parcel, so that it could be returned to agriculture in the future, if needed.

Cumulative Effects: The 80-acre parcel is currently used as agricultural land. The soils in this site are listed as Coolidge sandy loam which, if irrigated, is considered prime farmland. If the National Park Service acquires this land, it is likely that it will be taken out of agricultural production, which will have a moderate impact to the prime and unique farmland. However, this 80-acre parcel is only a small portion of the thousands of acres of farmland in the area. The owner is a willing seller who no longer wants to farm his land and has had many commercial developers show interest in buying the land. It is also possible that if the National Park Service acquires the land it could be returned to agriculture in the future. The National Park Service has no plans to develop the property at this time, and the irrigation canals will remain in place. Cumulatively, the effects of removing the property from agricultural production will have a moderate effect on the property itself.

**Conclusion:** The long-term effects from removing the 80-acre parcel from agriculture is minor to moderate and adverse. However, the effects to prime and unique farmland could be reversed in the future, if needed, by returning the land back to agriculture. Alternative 2 will not impair prime or unique farmland resources.

### **Impacts of Alternative 3 – Federal Land Transfers, Contiguous Property, and Grewe Site**

Alternative 3 includes the transfer of the Bureau of Indian Affairs and Bureau of Land Management properties to the National Park Service, the acquisition of an 80-acre parcel of land located along the western boundary of the Monument, and the Grewe Community sites. The 80-acre parcel is the only parcel in this Alternative that is currently used as agricultural land and considered to be prime farmland. Therefore, this Alternative will have the same impacts as Alternative 2.

**Cumulative Effects:** The 80-acre parcel is the only parcel in this Alternative that is currently used as agricultural land; therefore, the effects of this Alternative are the same as Alternative 2.

**Conclusion:** Alternative 3 will have the same effects as Alternative 2. Further, Alternative 3 will not impair prime or unique farmland resources.

### **Impacts of Alternative 4 (Preferred Alternative) – Federal Land Transfers, Contiguous Property, Grewe Site, and Portions of Adamsville**

The Preferred Alternative includes the transfer of the Bureau of Indian Affairs and Bureau of Land Management properties to the National Park Service, as well as the acquisition of an 80-acre parcel of land located along the western boundary of the Monument, the Grewe Community sites, and the 126-acre Adamsville Site. The 80-acre parcel is the only parcel in this Alternative that is currently used as agricultural land, so this Alternative will have the same impacts as Alternative 2.

**Cumulative Effects:** The 80-acre parcel is the only parcel in this Alternative that is currently used as agricultural land; therefore, Alternative 4 will have the same impacts as Alternative 2.

**Conclusion:** Alternative 4 will have the same effects as Alternative 2. Further, Alternative 4 will not impair prime or unique farmland resources.

## **Visual Resources**

### **Intensity Level Definitions**

Preservation of visual resources is important to retaining the historic setting/feeling and visitor experience at the proposed parcels of land. The rural, historic character of the landscape are key elements in the visual setting at these parcels. The methodology for assessing impacts to visual resources has been established based on these key elements, and is defined as follows:

- Negligible:** The impact to visual resources is at the lowest levels of detection, barely perceptible and not measurable.
- Minor:** The impact to visual resources would be noticeable, but would not alter the feeling, character, or setting associated with the viewshed of or from the park.
- Moderate:** The impact to visual resources would be more noticeable, and may alter the feeling, character, or setting associated with the viewshed of or from the park.

**Major:** The impact to visual resources would be readily apparent, and would alter the feeling, character, or setting associated with the viewshed of or from the park.

### **Impacts of Alternative 1 – No Action (Federal Land Transfers)**

The No Action Alternative will have a negligible to minor beneficial effect to visual resources associated with Casa Grande Ruins National Monument because the Bureau of Indian Affairs and Bureau of Land Management properties will be transferred to the National Park Service, who will manage these lands to preserve the viewshed. This effect on the viewshed is considered to be negligible to minor because these properties are small in size and would probably not be developed by the Bureau of Indian Affairs or the Bureau of Land Management anyway. The construction of fencing of the boundaries of any acquired lands would have a negligible to minor adverse effect on the viewshed as a result of the introduction of a noticeable feature on the landscape; however, fencing will be constructed to minimize impacts to visual resources.

Cumulative Effects: Development along State Highways 87 and 287 and in the City of Coolidge has resulted in the construction of buildings and structures that are visible from Casa Grande Ruins National Monument. The introduction of new buildings into the broader prehistoric landscape surrounding the Monument has had a moderate adverse effect to the monument's prehistoric setting and natural night sky. Acquisition of only the Bureau of Indian Affairs and Bureau of Land Management properties will enhance the visual setting of the prehistoric district to a negligible to minor degree by preventing the development of these properties. Cumulatively, the negligible to minor beneficial effects of the No Action Alternative in comparison to the substantial development in the City of Coolidge and surrounding the Monument will result in an overall minor to moderate adverse effect to the Monument's viewshed.

Conclusion: The No Action Alternative will result in negligible to minor beneficial effects to visual resources as a result of preserving two properties from future development. Negligible to minor adverse effects to the viewshed would result from the construction of boundary fences. The overall cumulative effect on visual resources will still be minor to moderate and adverse as a result of continuing development of the surrounding areas. This alternative will not impair visual resources.

### **Impacts of Alternative 2 – Federal Land Transfers and Contiguous Property**

Alternative 2 will have minor to moderate beneficial effects on visual resources associated with Casa Grande Ruins National Monument because all of the properties under consideration that are contiguous to the Monument will be preserved. This will facilitate an enhanced viewshed and cultural setting because these properties will be preserved by the National Park Service from potential development. This is particularly important with the 80-acres of private land to the west of the Monument which has been proposed for various other developments and is in direct viewshed of the Monument. The construction of fencing of the boundaries of any acquired lands would have a negligible to minor adverse effect on the viewshed as a result of the introduction of a noticeable feature on the landscape; however, fencing will be constructed to minimize impacts to visual resources.

Cumulative Effects: Development along State Highways 87 and 287 and in the City of Coolidge has resulted in the construction of buildings and structures that are visible from Casa Grande Ruins National Monument. The introduction of new buildings into the broader prehistoric landscape surrounding the Monument has had a moderate adverse effect to the monument's prehistoric setting and natural night sky. Acquisition of sites adjacent to the Monument and the Bureau of Indian Affairs and Bureau of Land Management properties will enhance the visual setting of the prehistoric district to a moderate degree by preventing the development of these properties. Alternative 2 will preserve a greater amount of land which will cumulatively benefit the viewed, but the extent of external development outside the Monument will still result in a minor to moderate adverse effect to the Monument's viewshed.

Conclusion: Alternative 2 will result in a minor to moderate beneficial effect to the visual resources of Casa Grande Ruins National Monument because the three properties surrounding the Monument would

be preserved and protected from future development. Negligible to minor adverse effects to the viewshed would result from the construction of boundary fences. Because the project will have beneficial impacts to the visual resources at Casa Grande Ruins National Monument, there would be no impairment of the Monument's resources or values.

### **Impacts of Alternative 3 – Federal Land Transfers, Contiguous Property, and Grewe Site**

Alternative 3 will result in moderate beneficial effects on visual resources associated with Casa Grande Ruins National Monument because all of the properties under consideration that are contiguous to the Monument will be preserved in addition to the Grewe Site which is also within the viewshed of the Monument. Therefore, this alternative will preserve a greater amount of land within the viewshed of the Monument from potential development. The construction of fencing of the boundaries of any acquired lands would have a negligible to minor adverse effect on the viewshed as a result of the introduction of a noticeable feature on the landscape; however, fencing will be constructed to minimize impacts to visual resources.

Cumulative Effects: Development along State Highways 87 and 287 and in the City of Coolidge has resulted in the construction of buildings and structures that are visible from Casa Grande Ruins National Monument. The introduction of new buildings into the broader prehistoric landscape surrounding the Monument has had a moderate adverse effect to the Monument's prehistoric setting and natural night sky. Acquisition of sites adjacent to the Monument, the Grewe community and the Bureau of Indian Affairs and Bureau of Land Management properties will enhance the visual setting of the prehistoric district to a moderate degree by preventing the development of these properties by other entities. Cumulatively, the moderate beneficial effects of Alternative 3 in comparison to the substantial amount of development occurring in the general area will still result in a cumulative, minor to moderate, adverse impact to the viewshed of the area.

Conclusion: Alternative 3 will result in a moderate beneficial effect to the visual resources of Casa Grande Ruins National Monument because the three properties adjacent to the Monument in addition to the nearby Grewe Site would be preserved and protected from future development. Negligible to minor adverse effects to the viewshed would result from the construction of boundary fences. Because the project will have beneficial impacts to the visual resources at Casa Grande Ruins National Monument, there would be no impairment of the monument's resources or values.

### **Impacts of Alternative 4 (Preferred Alternative) – Federal Land Transfers, Contiguous Property, Grewe Site, and Portions of Adamsville**

Alternative 4 will result in moderate beneficial effects to the visual resources associated with Casa Grande Ruins National Monument because the greatest amount of land is protected from development. By acquiring these properties, the National Park Service will preserve the viewshed associated with these properties, whether the properties are situated adjacent to or near the Monument or are a few miles away such as the Adamsville Site. Preservation of the viewshed will also assist the preservation of the cultural setting. The construction of fencing of the boundaries of any acquired lands would have a negligible to minor adverse effect on the viewshed as a result of the introduction of a noticeable feature on the landscape; however, fencing will be constructed to minimize impacts to visual resources.

Cumulative Effects: Development along State Highways 87 and 287 and in the City of Coolidge has resulted in the construction of buildings and structures that are visible from Casa Grande Ruins National Monument and the State Trust Land. The introduction of new buildings into the broader prehistoric landscape surrounding the Monument has had a moderate adverse effect to the monument's prehistoric setting and natural night sky. Acquisition of the Adamsville Site will preserve the natural night sky and current visual setting on the site by preventing development on the site. Acquisition of sites adjacent to the Monument, the Grewe community and the Bureau of Indian Affairs and Bureau of Land Management properties will enhance the visual setting of the prehistoric district to a moderate degree by preventing the



development of these properties. Cumulatively, the moderate beneficial effects of Alternative 4 in comparison to the continual and substantial development of areas near the Monument will still result a cumulative, minor to moderate, adverse impact to visual resources of the area.

**Conclusion:** Alternative 4 will result in a moderate beneficial effect to the visual resources of Casa Grande Ruins National Monument due to the preservation of the greatest amount of land being considered in this study. Negligible to minor adverse effects to the views shed would result from the construction of boundary fences. Because the project will have beneficial impacts to the visual resources at Casa Grande Ruins National Monument, there would be no impairment of the monument's resources or values.

## Visitor Use and Experience

### Intensity Level Definitions

Casa Grande Ruins National Monument was established to preserve and protect the Casa Grande and architectural and archeological resources of the Classic Period, and interpret the culture and history of the Hohokam people for the benefit and enjoyment of the public. The interpretation of the Hohokam culture plays an important role in the understanding of the Casa Grande Ruins and associated archeological site. The proposed parcels of land for acquisition will enable the National Park Service staff to expand the knowledge of the public about the culture through interpretation and research. The methodology used for assessing impacts to visitor use and experience are based on how the cultural resources are interpreted and incorporated into the overall visitor experience, and how a new parcels of land would affect the visitor. The thresholds for this impact assessment are as follows:

- Negligible:** Visitors would not be affected or changes in visitor use and/or experience would be below or at the level of detection. Any effects would be short-term. The visitor would not likely be aware of the effects associated with the alternative.
- Minor:** Changes in visitor use and/or experience would be detectable, although the changes would be slight and likely short-term. The visitor would be aware of the effects associated with the alternative, but the effects would be slight.
- Moderate:** Changes in visitor use and/or experience would be readily apparent and likely long-term. The visitor would be aware of the effects associated with the alternative, and would likely be able to express an opinion about the changes.
- Major:** Changes in visitor use and/or experience would be readily apparent and have substantial long-term consequences. The visitor would be aware of the effects associated with the alternative, and would likely express a strong opinion about the changes.

### Impacts of Alternative 1 – No Action (Federal Land Transfers)

The No Action Alternative will result in negligible to minor beneficial effects to the visitor use and experience of the Casa Grande Ruins National Monument because the current interpretation would not change. Although the Bureau of Indian Affairs and Bureau of Land Management parcels would still be transferred to the National Park Service, these two properties would not be interpreted or accessible to the public. Therefore, additional interpretive opportunities would not be available through the acquisition of these properties, and the current interpretation of the Monument would not change. However, minor beneficial effects would result from the preservation of these additional lands which will allow for increased understanding and research of the cultural resources located on these lands.

**Cumulative Effects:** Other past, present, and reasonably foreseeable future actions such as improvements to the parcels (boundary fence construction) will provide safety enhancements, which will result in long-term, minor, beneficial effects to visitor use and experience. The existing boundaries of the Monument

under the No Action Alternative have a negligible to minor, adverse effect on visitor use and experience because the visitor is only able to experience a small portion of the Hohokam culture. Cumulatively, the minor, beneficial effects of acquiring the Bureau of Indian Affairs and Bureau of Land Management parcels combined with the negligible to minor beneficial effects associated with the No Action Alternative; will result in an overall cumulative negligible to minor beneficial effect to visitor use and experience.

Conclusion: The No Action Alternative will result in negligible effects to visitor use and experience because the newly acquired properties will not be accessible to the public and the current interpretation at the Monument will not change. This alternative also results in minor beneficial impacts to visitor use and experience due the increased protection of archeological resources from which cultural information can be learned. Cumulatively, the No Action Alternative combined with other projects, will have a cumulative negligible to minor beneficial effect on visitor use and experience.

## **Impacts of Alternative 2 – Federal Land Transfers and Contiguous Property**

Alternative 2 will have the same impacts as Alternative 1 in addition to impacts associated with acquiring the 80 acres of private land. Alternative 2 would result in long-term, minor beneficial effects to the visitor use and experience of the Monument because the 80-acre parcel located along the western boundary of the Monument contains a significant portion of the prehistoric Canal Casa Grande which would be preserved. Although there are no plans to excavate this canal in the near future, it would still be protected from future development. Currently, the boundaries of the Monument do not include any canal segments, so the inclusion of this feature will benefit increased understanding and interpretation. Acquisition of these parcels will also provide a buffer to any future development near the Monument, thereby protecting the immediate viewshed which will also have a minor beneficial effect to visitor experience. Specific interpretation plans for these lands will be determined through the development of a General Management Plan in the future.

The construction of boundary fences will have a temporary minor adverse effect on visitor use from increased noise, dust, and fumes associated with the construction. These adverse effects will last only as long as construction, and the areas will resume their current status following construction.

Cumulative Effects: Other past, present, and reasonably foreseeable future actions such as improvements to the newly acquired parcels (boundary fencing) will provide safety enhancements for the visitor, which will result in long-term, minor, beneficial effects to visitor use and experience. Alternative 2 will improve visitor use and experience to a minor degree because it will allow park staff the ability to better interpret the Hohokam canal systems. Construction of boundary fences will impact visitor use and experience to a short-term, minor, adverse degree due to additional noise, dust, and fumes that will detract from the quiet experience. Cumulatively, the moderate, beneficial effects of acquiring these parcels of land will result in long-term, minor beneficial effects to visitor use and experience.

Conclusion: Alternative 2 will result in long-term, minor, beneficial effects to visitor use and experience by allowing park staff the ability to better interpret the Hohokam canal systems and enhancing the viewshed of the Monument. Alternative 2 will also result in short-term, minor, adverse impacts as a result of constructing boundary fences, including increased noise, dust, and fumes. Construction-related impacts will be temporary, and will dissipate following construction. Cumulatively, Alternative 2 in addition to other past, present, and reasonably foreseeable future actions will have long-term, minor, beneficial effects to visitor use and experience.

## **Impacts of Alternative 3 – Federal Land Transfers, Contiguous Property, and Grewe Site**

Alternative 3 would have the same impacts as Alternative 2 in addition to impacts related to acquiring the Grewe Site. Alternative 3 would result in long-term, minor to moderate beneficial effects to the visitor use and experience of the Monument because the Grewe site contains Preclassic Hohokam architecture, which is much earlier than what is preserved by the Monument, and the 80-acre parcel located along the

western boundary of the Monument contains a significant portion of the Canal Casa Grande which would be preserved. Although there are no plans to excavate the Grewe site or the canal in the near future, it would still be protected from future development and plans for interpretation will likely be developed. Currently, the boundaries of the Monument do not include any architecture from the Preclassic period (A.D. 550-1150) or canal segments. Acquisition of these parcels will also provide a buffer to any future development near the Monument. Specific interpretation plans for these lands will be determined through the development of a General Management Plan in the future.

The construction of boundary fences will have a temporary minor adverse effect on visitor use from increased noise, dust, and fumes associated with the construction. These adverse effects will last only as long as construction, and the areas will resume their current status following construction.

Cumulative Effects: Other past, present, and reasonably foreseeable future actions such as improvements to the newly acquired parcels (boundary fencing) will provide safety enhancements for the visitor, which will result in long-term, minor, beneficial effects to visitor use and experience. Alternative 3 will improve visitor use and experience to a moderate degree because it will allow park staff the ability to better interpret the Hohokam culture and canal systems. Construction of boundary fences will impact visitor use and experience to a short-term, minor, adverse degree due to additional noise, dust, and fumes that will detract from the quiet experience. Cumulatively, the moderate, beneficial effects of acquiring these parcels of land will result in long-term, moderate, beneficial effects to visitor use and experience.

Conclusion: Alternative 3 will result in long-term, minor to moderate, beneficial effects to visitor use and experience by allowing park staff the ability to better interpret the Hohokam culture and canal systems and enhancing the viewshed of the Monument. Alternative 3 will also result in short-term, minor, adverse impacts as a result of constructing boundary fences, including increased noise, dust, and fumes. Cumulatively, Alternative 3 in addition to other past, present, and reasonably foreseeable future actions will have long-term, moderate, beneficial effects to visitor use and experience.

### **Impacts of Alternative 4 (Preferred Alternative) – Federal Land Transfers, Contiguous Property, Grewe Site, and Portions of Adamsville**

Alternative 4 would have the same impacts as Alternative 3 in addition to those impacts that are related to acquiring portions of the Adamsville Site. The Preferred Alternative would result in long-term, moderate beneficial effects to the visitor use and experience of the Monument because the State Trust Land (Adamsville) would add to the current interpretation of the Hohokam culture, Grewe site contains Preclassic Hohokam architecture, which is much earlier than what is preserved by the Monument, and the 80-acre parcel located along the western boundary of the Monument contains a significant portion of the Canal Casa Grande which would be preserved. Although there are no plans to excavate the Adamsville site, Grewe site or the canal in the near future, it would still be protected from future development and interpreted for the visitors. Currently, the boundaries of the Monument do not include any architecture from the Preclassic period (A.D. 550-1150) or canal segments. Acquisition of these parcels will also provide a buffer to any future development near the Monument. Specific interpretation plans for these lands will be determined through the development of a General Management Plan in the future.

The construction of boundary fences will have a temporary minor adverse effect on visitor use from increased noise, dust, and fumes associated with the construction. These adverse effects will last only as long as construction, and the areas will resume their current status following construction.

Cumulative Effects: Other past, present, and reasonably foreseeable future actions such as improvements to the newly acquired parcels (boundary fencing) will provide safety enhancements for the visitor, which will result in long-term, minor, beneficial effects to visitor use and experience. The Preferred Alternative will improve visitor use and experience to a moderate degree because it will allow park staff the ability to better interpret the Hohokam culture and canal systems. Construction of boundary fences will impact visitor use and experience to a short-term, minor, adverse degree due to additional noise, dust, and fumes that will detract from the quiet experience. Cumulatively, the moderate, beneficial effects of

acquiring these parcels of land will result in long-term, moderate, beneficial effects to visitor use and experience.

**Conclusion:** The Preferred Alternative will result in long-term, moderate, beneficial effects to visitor use and experience by allowing park staff the ability to better interpret the Hohokam culture and canal systems and enhancing the viewshed of the Monument. The Preferred Alternative will also result in short-term, minor, adverse impacts as a result of constructing boundary fences, including increased noise, dust, and fumes. Cumulatively, the Preferred Alternative in addition to other past, present, and reasonably foreseeable future actions will have long-term, moderate, beneficial effects to visitor use and experience.

## Park Operations

### Intensity Level Definitions

Implementation of a project can change the operations of a park. A project may affect the number of employees needed at the park; the type of duties that need to be conducted; when/who will conduct these duties; how activities should be conducted; and administrative procedures. The methodology used to assess potential changes to park operations are defined as follows:

- Negligible:** Park operations would not be affected or the effect would be at or below the lower levels of detection, and would not have an appreciable effect on park operations.
- Minor:** The effect would be detectable, but would be of a magnitude that would not have an appreciable adverse or beneficial effect on park operations. If mitigation were needed to offset adverse effects, it would be relatively simple and successful.
- Moderate:** The effects would be readily apparent and would result in a substantial adverse or beneficial change in park operations in a manner noticeable to staff and the public. Mitigation measures would probably be necessary to offset adverse effects and would likely be successful.
- Major:** The effects would be readily apparent and would result in a substantial adverse or beneficial change in park operations in a manner noticeable to staff and the public, and be markedly different from existing operations. Mitigation measures to offset adverse effects would be needed, could be expensive, and their success could not be guaranteed.

### Impacts of Alternative 1 – No Action (Federal Land Transfers)

The No Action Alternative will have negligible to minor adverse effects on park operations because some additional tasks will be required when additional lands are acquired. These tasks will include fencing, weed control, and monitoring of additional properties, which will require some additional labor, but will not require additional employees. The No Action Alternative will not affect the Monument's present interpretive programming or the routine and cyclic duties of the maintenance division. Normal operations as they exist today will continue mostly unchanged.

**Cumulative Effects:** Overall, the majority of past, present, and reasonably foreseeable future projects will have negligible to minor adverse impacts on long-term park operations because additional duties will be required to manage additional lands. Administrative procedures for the National Monument will not be affected, and the duties of most employees will not be altered. This, in addition to future projects such as the construction nature trail and the handicapped access to the ballcourt, will result in a cumulative increase of duties, or a negligible to minor adverse impact to park operations.

**Conclusion:** The No Action Alternative will have a negligible to minor adverse impact to existing park operations because employee duties may slightly change or increase. Cumulatively, the No Action Alternative combined with other past, present, and reasonably foreseeable future projects will also result in negligible to minor adverse impacts to park operations.

## **Impacts of Alternative 2 – Federal Land Transfers and Contiguous Property**

Alternative 2 will have negligible to minor adverse impacts to park operations because of additional tasks that will be required with the acquisition of additional lands. Fencing will be required on the additional lands, particularly the proposed 80 acre parcel that is adjacent to the Monument's west boundary. This parcel is not currently fenced on the north and west and will eventually need a fence constructed for protection and security. Existing park employees will oversee fence construction.

Weed control will also need to be performed, especially on the 80 acres of private land currently used for agriculture. The last crop (alfalfa) was harvested and then tilled. Only a few noxious and exotic weeds are present. Once acquired the parcel would be dragged level and allowed to return to a natural condition. Weeds and debris will be monitored and addressed by maintenance as required by DO-2, and National Park Service Management Policies.

Occasionally litter will need to be removed, and the property patrolled to deter trespass and vandalism. In addition, some employees will have additional duties of preparing funding requests (PMIS), developing contract specifications, bids, and contract oversight during fence installation. These duties will be performed by existing employees which will adversely affect park operations to a negligible to minor degree. Additional employees will not be required for this alternative.

**Cumulative Effects:** Overall, the majority of past, present, and reasonably foreseeable future projects listed in the cumulative scenario will have negligible to minor adverse impacts on long-term park operations because additional employees will not be needed for these projects; administrative procedures for the National Monument will not be affected; and the duties of employees will only be slightly altered in maintaining the property to standards. This, in addition to future projects such as the construction nature trail and the handicapped access to the ballcourt, will result in a cumulative increase of duties, or a negligible to minor adverse impact to park operations.

**Conclusion:** Alternative 2 will result in negligible to minor, adverse effects will occur to park operations as a result of increased duties of some existing employees. Cumulatively, this alternative combined with other past, present, and reasonably foreseeable future projects will also result in negligible to minor adverse impacts to park operations.

## **Impacts of Alternative 3 – Federal Land Transfers, Contiguous Property, and Grewe Site**

Alternative 3 will create both positive and negative moderate impacts to park operations. On the positive side, the interpretive programming (tours and talks) will increase providing greater education and insight for park visitors over existing conditions. An increase in personnel in both the interpretive and maintenance divisions will be required. The monument may physically expand its interpretive tours to include parts of the Grewe Community. The opportunity for partnerships with the City of Coolidge, the Gila River Indian Community and civic organizations to develop an interpretive trail through the Grewe Community interpreting "What lies beneath these grounds" is boundless in opportunities. The Gila River Indian Community and the City of Coolidge have expressed interest and encouragement to pursue collaborative opportunities.

Of the three separate parcels proposed for this alternative not counting the 80 acres on the west boundary, two will require fencing. The Faul property (2 acres) and the thirteen acres in front and adjacent to Wal-Mart are not fenced and will require fencing for protection and security. Fencing will cause temporary negligible to minor adverse effects in the form of dust, noise, visual equipment and the

increased man hours of the staff for planning, negotiation, execution, and monitoring of the fence contract..

The direct negligible to minor effects to park operations will be the addition of three (3) new maintenance positions, two (2) park rangers (protection) and two (2) park rangers (interpretive), and their required equipment: 2 pick-up trucks, 1 interpretive van, and 1 law enforcement vehicle. The FY 2003 estimated cost is \$580,000.

Cumulative Effects: Overall, the majority of past, present, and reasonably foreseeable future projects listed in the cumulative scenario will have negligible to minor impacts on long-term park operations, basically because additional personnel will be needed to fulfill basic park operations. Increased interpretation, routine and cyclic maintenance and the increased load for administrative and management in meeting the parks expanded mission.

The temporary negative impacts associated with the installation of new fences will create dust, noise, visual intrusion from on site equipment and personnel. Once the fences are complete no further action is contemplated pending the development of a General Management Plan scheduled for fiscal year 2005 or beyond. The GMP will establish trail locations, transportation corridors, interpretive signing, and health and safety requirements to meet national standards.

The overall level of impacts is rated at moderate, in that substantial changes will occur to the park operations that will be noticeable to the general public, local community, partners and will impact the entire staff. The communities, general public and partners will also notice a very positive expansion of the parks mission to provide scientific and public understanding of the natural, cultural, prehistoric, historic and archeological resources defining the period in history that archeologists refer to as the "Classic Period" when the ancient people known as the "Hohokam" farmed the valley and built the "Casa Grande" or Great House.

Conclusion: Although this alternative will have moderate impacts, the positive impacts of acquiring important archeological resources known to be part of a very large prehistoric community now known as "The Grewe Community" which is included in all of the proposed parcels, and to be able to preserve and interpret these irreplaceable resources for today's visitors and those of future generations is a measure well worth pursuing. The moderate impacts to park operations entail acquiring seven new positions with vehicles and equipment at an estimated cost of \$580,000. Cumulatively, this alternative combined with other past, present, and reasonably foreseeable future projects will also result in moderate adverse impacts to park operations.

### **Impacts of Alternative 4 (Preferred Alternative) – Federal Land Transfers, Contiguous Property, Grewe Site, and Portions of Adamsville**

The impact for Alternative 4 is the same as Alternative 3 with respect to park operations. In addition, Alternative 4 presents some logistical obstacles because of the location of the Adamsville Site approximately four miles to the east of the Monument. Acquiring these non-contiguous units, the Monument becomes a lateral park unit with the furthest unit (Adamsville) being approximately four miles away from the main park unit. This alternative will not require additional resources (employees or funding), but will require thoughtful time and money management due to the acquisition of Adamsville and its location away from the Monument.

Cumulative Effects: Overall, the majority of past, present, and reasonably foreseeable future projects listed in the cumulative scenario will have moderate adverse impacts on long-term park operations, basically because additional personnel will be needed to fulfill basic park operations including increased interpretation, routine and cyclic maintenance, and the increased load for administrative and management in meeting the parks expanded mission.

The temporary negative impacts associated with the installation of new fences will create dust, noise, visual intrusion from on site equipment and personnel. Once the fences are complete no further action is contemplated pending the development of a General Management Plan scheduled for fiscal year 2005 or beyond. The GMP will establish trail locations, transportation corridors, interpretive signing, and health and safety requirements to meet national standards.

The overall level of impacts is rated at moderate in that substantial changes will occur to the park operations that will be noticeable to the general public, local community, partners and will impact the entire staff. The communities, general public and partners will also notice a very positive expansion of the parks mission to provide scientific and public understanding of the natural, cultural, prehistoric, historic and archeological resources defining the period in history that archeologist refer to as the "Classic Period" when the ancient people known as the "Hohokam" farmed the valley and built the "Casa Grande" or Great House.

Conclusion: This alternative will result in a moderate adverse impact to park operations, which are the same as Alternative 3 with the number of new employees and funding needed. The difference between Alternative 4 and Alternative 3 is that Alternative 4 involves additional lands and will require thoughtful time and money management to manage these lands. Cumulatively, this alternative combined with other past, present, and reasonably foreseeable future projects will also result in moderate adverse impacts to park operations.

# CONSULTATION/COORDINATION

## Project Scoping

Initial project scoping was conducted to inform various agencies and the public about the proposal to expand the boundaries of Casa Grande Ruins National Monument, and to elicit comments, issues, and concerns with regards to the project. The following actions were taken on part of the National Park Service as part of the public scoping process for this Environmental Assessment/Assessment of Effect, as listed by date:

- **Tribal Consultation Letters, July 11, 2000 through March 28, 2002** – To initiate Native American consultation, several formal letters were submitted to the Gila River Indian Community and other affiliated tribes, as listed below, describing the project and requesting comments and inviting interested individuals to attend the scheduled public meetings. No written responses were received.
- **Press Release for Scoping Meetings, February 2001** – A press release soliciting the public's input on the Monument's future was issued by means of local newspaper publications. This press release invited the public to attend the first of several public meetings that were held between 2001 and 2003.
- **Press Release for Environmental Assessment/ Assessment of Effect Scoping, June 19, 2003** – A press release describing the proposed action and the Environmental Assessment/Assessment of Effect was issued by means of direct mailing to the list of stakeholders, affiliated tribes, and interested parties that the Casa Grande Ruins National Monument maintains, in addition to posting the press release in the local newspapers and on the Monument's website. With this press release, the public was given 30 days to comment on the project from June 19, 2003 to July 21, 2003. During this time, no comments were received.
- **Announcement of Combined NEPA/Section 106 Document to SHPO, June 2003** – The National Park Service verbally contacted the Arizona State Historic Preservation Office to inform them that the preparation of this combined Environmental Assessment/ Assessment of Effect would be used to comply with Section 106 of the National Historic Preservation Act.

## Internal Scoping

Internal scoping was conducted by an interdisciplinary team of professionals from Casa Grande Ruins National Monument, the Southern Arizona Group Office, and the Intermountain Support Office including the superintendent, park rangers, a NEPA/106 specialist, a natural resources specialist, and a cultural resources specialist. Interdisciplinary team members met on May 21, 2003 to discuss the purpose and need for the project; various alternatives; potential environmental impacts; past, present, and reasonably foreseeable projects that may have cumulative effects; and possible mitigation measures. The team also gathered background information and discussed public outreach for the project. Over the course of the project, team members have conducted individual site visits to view and evaluate the proposed acquisition sites. The results of the May 2003 meeting are documented in this Environmental Assessment/ Assessment of Effect.

## External Scoping

The following list of persons represents the organizations, tribes, and agencies contacted and invited to attend public meetings concerning the development around Casa Grande Ruins National Monument and the preparation of the Resource Protection Study. Some of these groups and individuals also provided information; assisted in identifying important issues; and developing possible alternatives to use in the Resource Protection Study.



**Federal Agencies**

- Advisory Council on Historic Preservation
- Natural Resources Conservation Service
- U.S. Fish and Wildlife Service
- Bureau of Indian Affairs/San Carlos Irrigation Project (SCIP) & Headquarters in Phoenix
- Bureau of Land Management

**State of Arizona Agencies**

- Arizona State Historic Preservation Office
- Arizona Department of Game and Fish
- Arizona Department of Transportation
- Office of the Governor
- Congressional Representative, Rick Renzi
- Office of the Senator, John McCain
- Arizona State Land Department
- Central Arizona Association of Governments
- Arizona State Museum
- Arizona State University
- University of Arizona

**Local Agencies**

- City of Coolidge
- City of Florence
- Pinal County Board of Supervisors

**Affiliated Native American Groups**

- Gila River Indian Community
- Ak-Chin Indian Community
- Salt River Pima-Maricopa Indian Community
- Tohono O'odahm Nation
- Hopi Tribe
- Zuni Pueblo

**Private Entities**

- Arizona State University
- Archaeological Conservancy

## **Public Review of Environmental Assessment/ Assessment of Effect**

The Environmental Assessment/ Assessment of Effect will be released for public review in November 2003. To inform the public of the availability of the Environmental Assessment/ Assessment of Effect, the National Park Service will publish and distribute a letter or press release to various agencies, tribes, and members of the public on the National Monument's mailing list, as well as the local newspaper. Copies of the document will also be available for review at various repositories during the comment period including the National Monument's visitor center; on the internet at [www.nps.gov/cagr](http://www.nps.gov/cagr); or by request.

The Environmental Assessment/ Assessment of Effect is subject to a 30-day public comment period ending December 30, 2003. During this time, the public is encouraged to submit their written comments

to the National Park Service address provided at the beginning of this document. Following the close of the comment period, all public comments will be reviewed and analyzed, prior to the release of a decision document. The National Park Service will issue responses to substantive comments received during the public comment period, and will make appropriate changes to the Environmental Assessment/Assessment of Effect, as needed.

## List of Recipients

Copies of the Environmental Assessment/Assessment of Effect will be mailed to various federal, state, local, and private agencies/entities, including the Arizona State Historic Preservation Office from whom concurrence will be requested regarding the *no historic properties affected* determinations for historic properties. A letter or press release will be distributed to Native American tribes, stakeholders, and other interested members of the public on the National Monument's mailing list. Copies of the Environmental Assessment/Assessment of Effect will be provided to interested individuals, upon request. As described above, copies will also be available for review at the visitor center and on the internet.

## List of Preparers

### Preparers (developed EA content):

- Dawn R. Daw, Park Ranger, National Park Service, Casa Grande Ruins National Monument, Coolidge Arizona
- Cheryl Eckhardt, NEPA/106 Specialist, National Park Service, Intermountain Region Support Office, Denver, Colorado
- Kevin Harper, Archeologist, National Park Service, Southern Arizona Parks, Phoenix, Arizona
- Larry Laing, Natural Resource Manager, National Park Service, Southern Arizona Parks, Phoenix, Arizona
- Don Spencer, Superintendent, National Park Service, Casa Grande Ruins National Monument, Coolidge Arizona

### Consultants (provided information):

- Ronald Beckwith, Archeologist, National Park Service, Western Archeological and Conservation Center, Tucson, Arizona
- Doug Craig, Archeologist, Northland Research Incorporated, Tempe, Arizona
- Trinkle Jones, Supervisory Archeologist, National Park Service, Western Archeological and Conservation Center, Tucson, Arizona

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- EPA 2000 *Arizona State Implementation Plan, Chapter 2: Ambient Air Quality Standards, Article 4. Attainment Area Classification*, United States Environmental Protection Agency Region 9, Air Programs Website, 2000
- NPS 2003 *Casa Grande Ruins National Monument, Resource Protection Study, Site Assessment (Draft)*, prepared by Ronald J. Beckwith of the Western Archeological and Conservation Center, dated April 7, 2003.
- NPS 2000a *Strategic Plan, Casa Grande Ruins National Monument*, prepared by the National Park Service, for the period October 1, 2000 through September 30, 2005.
- NPS 2000b *Management Policies*, National Park Service, U.S. Department of the Interior, December 2000.
- NPS 1997 *Casa Grande Ruins National Monument, Cultural Landscape Inventory – Level 2*, prepared by the University of Arizona through Cooperative Agreement with the National Park Service, 1997.
- NRI 2001 *The Grewe Archaeological Research Project, Volumes 1-3*, prepared by Craig, Douglas B., Northland Research, Inc., Tempe, Arizona 2001
- MacMahon 1997 *National Audubon Society Nature Guides, Deserts*, prepared by MacMahon, James A., Alfred A. Knopf, Inc., New York, 1997
- NRCS 2003 Personal communications between Dawn Daw of the National Park Service and Jamie Gillum and Jeff Schmidt of the Natural Resources Conservation Service regarding prime and unique farmlands; several conversations were held from June through July 2003.
- Powell 2002 *Biological Inventory Report for the Sonoran Desert Network: 2000 and 2001 Field Seasons. Annual Report No. 1*, prepared by Powell, B. F., K. Docherty, and W.L. Halvorson, Sonoran Desert Network Inventory Program. USGS Sonoran Desert Field Station and School of Renewable Natural Resources, University of Arizona, Tucson, 2002
- SCS 1991 United States Department of Agriculture, Soil Conservation Service. 1991. Soil Survey of Pinal County, Arizona, Western Part, 154 pages, illus., maps.
- Turner 1994 *Tropical-Subtropical Desertlands, Biotic Communities Southwestern United States and Northwestern Mexico*, Raymond M. and Brown, David E., University of Utah Press, Salt Lake City, Utah, 1994.
- USFWS 2003 Letter from the U.S. Fish and Wildlife Service indicating there are no records of threatened or endangered species in the project area; dated May 29, 2003.
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